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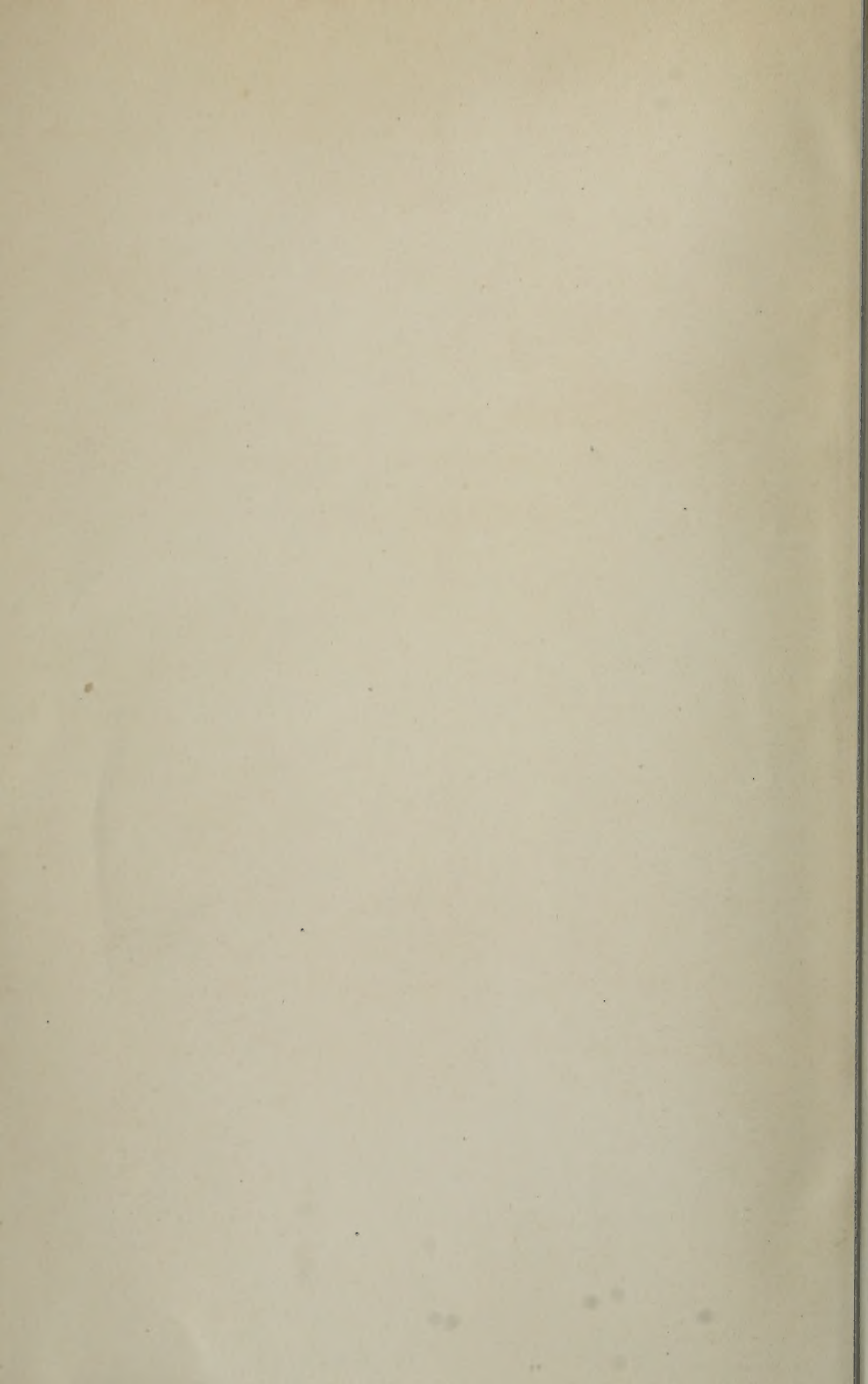
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838
437
No. 2311

United States
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.

(IN THREE VOLUMES)

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Appellee.

VOLUME III.

(Pages 801 to 1212, Inclusive.)

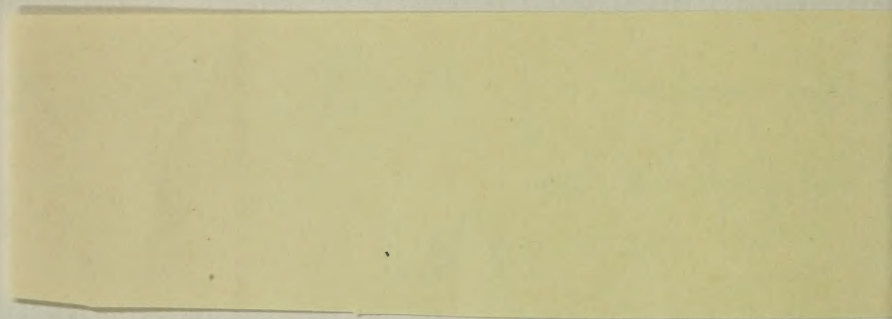
Upon Appeal from the United States District Court for
the District of Alaska, Division No. 1.

FILED

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Records of U.S. Circuit Court
of appeals

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ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY, a Corporation,

Appellee.

VOLUME III.

(Pages 801 to 1212, Inclusive.)

Upon Appeal from the United States District Court for the District of Alaska, Division No. 1.

Interrogatory No. 20:

Can a synchronous motor be so adjusted and used so as to operate at unity power factor? [728]

Interrogatory No. 21:

Are synchronous motors in general use?

Interrogatory No. 22:

Can 300 electric horse-power be developed by means of a synchronous motor from a three phase current of about 56 amperes with a voltage of 2300 impressed?

Interrogatory No. 23:

At the generating plant will such a current furnish 300 horse-power for lighting purposes?

Interrogatory No. 24:

Can a motor requiring a current of 300 horse-power to operate be started with a current of 300 horse-power?

Interrogatory No. 25:

If you answer the preceding interrogatory by stating that such a motor cannot be started with the same amount of power that it requires to operate it, how much more power approximately does it require to start a simple squirrel cage motor of the induction type than it does to operate such motor?

Interrogatory No. 26:

What is the difference between the starting current and the running current of the various forms of induction motors?

Interrogatory No. 27:

If a time relay circuit-breaker were installed on the transmission line of a motor, requiring 300 horse-power to operate and such motor were operated by a current flowing over such line and the circuit-

breaker being set to permit the flow of such current and such motor were brought [729] to a state of rest and were afterwards started and placed in operation would the current drawn at the time such motor was started be of greater horse-power than the current drawn when such motor was in continuous operation, the voltage being kept constant?

Interrogatory No. 28:

Would not a time relay circuit-breaker set so as to permit the flow of a current of 300 horse-power permit the taking of a current of greater horse-power for short periods of time?

Interrogatory No. 29:

Is there any other practical device by which the uninterrupted flow of a current could be limited to any given limit at all times except by means of an instantaneous circuit-breaker?

Interrogatory No. 30:

Where a current sought to be furnished or made available is to be a current of not to exceed a given electric horse-power, which, if any form of circuit-breaker is in general use, the instantaneous circuit-breaker or the time relay circuit-breaker?

Interrogatory No. 31:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the form in general use, you may state whether it is the proper appliance to be used for such purpose. [730]

Interrogatory No. 32:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the proper appliance under the facts stated in the two preceding interrogatories, you may state why the use

of such instantaneous circuit-breaker is proper.
[731]

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

No. 968-A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

**Cross-Interrogatories to be Propounded to C. L.
Cory, W. J. Davis, C. E. Heise, E. A. Quinn, A.
M. Hunt and H. C. Parker.**

Cross-interrogatory No. 1:

Are you or have you recently been in the employ
of F. W. Bradley or any of his associates or of O.
Mills or any of the defendant companies?

Cross-interrogatory No. 2:

Attached to these cross-interrogatories you will find
a copy of the contract in dispute in this action and
before answering any of the questions, either direct
or cross, please read contract and bear the same in
mind in answering the questions addressed to you.

Cross-interrogatory No. 3:

Is it not a fact that induction motors are used upon

three-phase alternating currents by power consumers much more than synchronous motors? [732]

Cross-interrogatory No. 4:

Where have you seen a synchronous motor in use upon a three-phase alternating current for a load of not to exceed 300 horse-power?

Cross-interrogatory No. 5:

Is not the power factor less than unity wherever induction motors are used upon a three-phase alternating current?

Cross-interrogatory No. 6:

If you answer the last cross-interrogatory in the negative, state the conditions under which you have observed a unity power factor in connection with the use of an induction motor of 300 horse-power or less.

Cross-interrogatory No. 7:

What is the ordinary device or instrument for measuring horse-power upon an electric current where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent power?

Cross-interrogatory No. 8:

What is the accepted definition of power factor?

Cross-interrogatory No. 9:

Assuming in this case that it was the intention of the parties to deal in real and not apparent power and that the contract did not require the use of a synchronous motor and that the contract contemplated the use of the power contracted for in mining operations, would you not measure the power by means of a wattmeter and [733] set your circuit-breaker according to the reading of your ammeter and volta-

meter at the instant when your wattmeter showed a consumption of 300 real horse-power?

Cross-interrogatory No. 10:

Assuming that it was the intention of the parties to the contract that the 300 horse-power called for therein was to be used in ordinary mining operations, would it not be reasonable to expect that the power would be applied to induction motors?

Cross-interrogatory No. 11:

If you answer the last question in the negative, state what observation and experience you have had with reference to the use of motors in connection with mining which would justify you in assuming that synchronous motors are commonly used in mining operations upon loads of 300 horse-power or less.

Cross-interrogatory No. 12:

If you answer direct interrogatory No. 16 to the effect that the apparatus mentioned in that interrogatory would permit the uninterrupted flow of a current not to exceed 300 horse-power, assume that the motor upon such current is an induction motor of the ordinary type and not a synchronous motor, can the benefit and use of 300 horse-power be secured under the conditions named in interrogatory [734] No. 16, would not a wattmeter indicate under such a setting that less than 300 horse-power was being taken?

Cross-interrogatory No. 13:

If you answer direct interrogatory No. 19 in the affirmative, that is to the effect that the power factor will vary depending upon the conditions of the load and other matters in connection with the operations carried on, assume for the purposes of this question

that the contract called for the delivery of real and not apparent power, assume that the power factor is 70 instead of unity and that the voltage is 2300 volts, at what amperage would your circuit-breaker be set so as to permit the use of 300 horse-power?

Cross-interrogatory No. 14:

Having answered the last question and assuming that the power factor is 70 when the full load of 300 horse-power is taken and that the power factor has been determined under normal conditions, if these conditions are maintained and not changed, should the circuit-breaker not remain as stated in answer to your last question?

Cross-interrogatory No. 15:

Assuming the conditions named in the last two cross-interrogatories, is it not a fact that the power [735] factor would decrease if a fractional instead of a full load were used in operating the same machinery? Under such fractional load, however, would you have to change the setting of the circuit-breaker so as to prevent the taking of more than the maximum of real power called for?

Cross-interrogatory No. 16:

If you answer direct interrogatory No. 21 in the affirmative, state what you mean by synchronous motors being in general use.

Cross-interrogatory No. 17:

If you answer direct interrogatory No. 21 in the affirmative, state specifically the number of instances of synchronous motors of 300 horse-power or less, within your own knowledge, that are in use and state also the number of induction motors of 300 horse-

power or less that are in general use.

Cross-interrogatory No. 18:

If you answer direct interrogatory No. 24 in the negative, state whether a motor requiring 300 horse-power to operate can be started from a plant with sufficient water power available to generate 300 horse-power.

Cross-interrogatory No. 19:

Assuming horse-power to be worth \$87.00 per annum, what is the value of a thirty second starting surge of 600 horse-power? [736]

Cross-interrogatory No. 20:

Assuming ordinary stoppages at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse-power, would not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from four to five times during the month?

Cross-interrogatory No. 21:

Where the beneficial use of 300 horse-power is contemplated by the parties to a contract and synchronous motors are not contemplated, but the ordinary type of induction motor is contemplated and in actual use, is it possible to obtain the uninterrupted and beneficial use of 300 horse-power without taking a starting surge of more than 300 horse-power?

Cross-interrogatory No. 22:

If the beneficial and uninterrupted use of 300 horse-power is contemplated by the parties and ordinary types of induction motor are in use as contemplated, can such use be obtained with an instantane-

ous circuit-breaker set at 50 amperes with a voltage of 2300 volts? [737]

Cross-interrogatory No. 23:

You have answered the direct interrogatories propounded by the defendants in this case. Is it not a fact that all of these answers are based upon the assumption of making available 300 apparent horse-power as distinguished from 300 real horse-power?

Cross-interrogatory No. 24:

If you answer the last question in the negative, point out how many and what of your answers, giving the number of the same, contemplate the use of real as distinguished from apparent power, assuming that the party to the contract contemplated the use of induction motors of the ordinary type and not the use of synchronous motors.

Cross-interrogatory No. 25:

Assuming that the direct interrogatories in this action, Nos. 5 to 32, inclusive, call upon you to answer in terms of real instead of apparent power and under ordinary conditions with reference to the use of induction motors, it being assumed that the use of induction motors of the ordinary type was contemplated by the parties, answer each one of the questions in terms of real power, under the assumption that the parties contemplated the use of induction motors [738] of the ordinary type.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff. [739]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and The Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

N. P. WITNESSETH, First, the lessor has this date and does by these presents lease under the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to-wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71 B. The Belvedere Mill-site U. S. Mineral Entry No. 25, lot 72 B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau channel; thence first course along the meander line of Gastineau Channel at ordinary high water

P. J. K. mark N. 52 00' W. 54 feet to stake No. 2;

N. P. thence second course N. 48 15' E. 200 feet to stake No. 3; then S. 52. 00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one-quarter of an acre more or less, courses expressed from the true meridian, Mag. Var. 29. 30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three-quarters of a mile from its mouth, together with the flume and

pipe-line connecting the same with the beach near the mill at the south of the said Sheep Creek, also the saw-mill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said saw mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-five (\$125.00) Dollars per month; payable in gold coin of the United States on the first day of each month during the term of said

P. J. K. lease at the office of the lessees at Tread-

N. P. well, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein

contained, that it shall be lawful for the

P. J. K. lessor to re-enter said premises and re-

N. P. move all persons therefrom, and the lessees do hereby covenant, promise and agree to

pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

P. J. K. It is the intention of the lessees to erect,

N. P. equip and maintain upon said premises a water power plant of substantial size and

efficiency for the generation of electric power, and if at any time after Two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a

deed or deeds conveying said leased property herein described to the parties of the second part. If prior to the expiration of nine years from the date hereof the lessor

does not elect to convey to lessees or their assigns the property herein leased and accept in

full consideration therefor the right to the use the three-hundred (300) electric-horse-power hereinbefore mentioned, the lessee

may at their option [740] prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-Five Thousand Dollars (\$25,000) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one-quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now

asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of

P. J. K. them, they shall become the property of
 N. P. the lessor and remain covered by this lease
 and subject to all the terms and conditions
 thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so that any successor or successors in interest

P. J. K. to the lessor and or lessees who may ac-
 N. P. quire any interest in and to the titles to the
 said land shall be bound by this conveyance
 in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

P. J. K. If neither of the options herein provided
 N. P. for are accepted by either the lessor or the
 lessees then the property and rights herein
 described with all the improvements that are or that may be hereafter placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant

to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written. Executed in triplicate.

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY,

WALLACE HACKETT,

President,

And HENRY ENDICOTT,

Treasurer.

ALASKA TREADWELL GOLD MINING
COMPANY,

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING
CO.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING CO.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, F. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Mexican Gold Mining Company and Alaska [741] United Gold Mining Co., the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Treadwell Gold

Mining Co., the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of
San Francisco, State of California.

Commonwealth of Massachusetts,
County of Suffolk,
City of Boston,—ss.

Be it remembered, that on this 14th day of October, 1909, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a Corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such president and Treasurer; and said Henry Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation, executed the foregoing instrument for and on behalf of said Corporation as the free and voluntary act of said corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by

me first duly sworn on his oath states that he is the Treasurer of said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation, and that the seal hereinbefore affixed in the corporate seal of said Corporation, and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof, I have hereunto set my hand and seal the day and year first above written.

[Seal]

LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913. [742]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY
(a Corporation),

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY (a Corporation), ALASKA UNITED GOLD MINING COMPANY (a Corporation), ALASKA MEXICAN GOLD MINING COMPANY (a Corporation), and ROBERT A. KINZIE,

Defendants.

Deposition of C. L. Cory [for Defendants].

BE IT REMEMBERED that pursuant to the stipulation of counsel for the respective parties in the above-entitled action attached hereto, together with the interrogatories, both direct and cross, also

attached hereto, on the 20th day of February, 1913, in the City and County of San Francisco, State of California, before me, P. J. Kennedy, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared C. L. Cory, a witness produced on behalf of the defendants in the above-entitled action, now pending in said Court, who being by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in said cause, and to whom I propounded said interrogatories, both direct and cross, testified as follows: [743]

Answer to Direct Interrogatory No. 1:

C. L. Cory. I reside in Berkeley, California.

Answer to Direct Interrogatory No. 2:

My profession is a professor or teacher of Electrical Engineering, and I am also a Consulting Engineer.

Answer to Direct Interrogatory No. 3:

I was educated at Cornell University, Ithaca, New York, doing graduate work there after having graduated from Purdue University at Lafayette, Indiana. I have been a teacher of Electrical Engineering since 1891, having been connected with the University of California at Berkeley continuously since 1892. I have had general experience as a consulting engineer, beginning in April, 1900, since which time in addition to my work at the University of California I have maintained an office in San Francisco, doing general consulting engineering work, principally in the Western States. I have had experience in the design and construction of elec-

(Deposition of C. L. Cory.)

trical power stations, both water power and steam driven, and the transmission and use of electrical power so generated in power operations including the operation of street railway systems, manufacturing plants, mines and electric lighting.

Answer to Direct Interrogatory No. 4:

My present occupation is that of Professor of Electrical Engineering, University of California, and Dean of the College of Mechanics of that institution, where I give instruction in the courses in Electrical Engineering and have general direction of the work done at the University of California in [744] steam, hydraulic, gas and electrical engineering.

In connection with my office in San Francisco I am carrying on a general consulting engineering practice, doing work for various municipalities, corporations and similar organizations.

Answer to Direct Interrogatory No. 5:

Yes.

Answer to Direct Interrogatory No. 6:

A current of electricity of not to exceed 300 electric horse-power is the current usually expressed in amperes by the use of which 300 electric horse-power can be produced.

Answer to Direct Interrogatory No. 7:

The watt.

Answer to Direct Interrogatory No. 8:

A watt is the equivalent of the product of the unit of current practically known as the ampere and the unit of electric pressure or voltage, practically known as the volt.

(Deposition of C. L. Cory.)

Answer to Direct Interrogatory No. 9:

The number of watts in a three-phase system is determined by taking the product of the current in amperes and the electric pressure or voltage in volts, multiplying this product by a constant particularly applicable to the three-phase system, which constant is the $\sqrt{3}$ or 1.732 times what is known as the power factor, which latter depends entirely upon the conditions of the load.

Answer to Direct Interrogatory No. 10:

746. [745]

Answer to Direct Interrogatory No. 11:

In my opinion no particular power factor is necessarily understood. However, if no mention is made of the power factor, I would assume that a power factor of unity, or 100% would apply. The Standardization Rules of the American Institute of Electrical Engineers, which are generally adopted by the engineering profession, especially Rule 74a, specifically states that "if the apparatus (electrical apparatus) is rated in Kilowatts (a Kilowatt = 1000 watts and 746 watts = 1 H. P.) without specification as to the power factor, a power factor of 100% shall be understood." The same rule, which members of the engineering profession, including myself, followed in our practice, further states that if the electrical apparatus is "rated in Kilowatts and a power factor other than 100% be specified, this should be understood as defining only the nature of the load, and not as applying an increase in the ampere (current) rating of the apparatus which should be based

(Deposition of C. L. Cory.)

upon the Kilowatt rating at 100% power factor."

(Note:—The words in parentheses are mine.)

Answer to Direct Interrogatory No. 12:

If it is sought to make a current of not to exceed 300 H. P. available nothing being stated as to the use to which the power is to be applied, or the type of motors or other electrical apparatus to be installed, etc., I could not do otherwise than assume the power factor of 100% to be understood, because if I did not so assume, it would be impossible to in any way determine the current which it was sought to make available.

Answers to Direct Interrogatories Nos. 13 and 14:

Under the conditions stated in the questions, it is impossible to apply any particular power factor because whether this power factor is 100% or unity, or very nearly zero depends [746] entirely upon the use to which the electric current is applied; in other words, the character of the load and the apparatus used to receive the electric current. Therefore I would assume the power factor would be 100% since no definite statement is made as regards the power factor.

Answer to Direct Interrogatory No. 15:

I would proceed to measure the current with an ammeter, preferably one of the recording type which would record by drawing a curve upon a piece of paper the variations of the current from time to time.

Answer to Direct Interrogatory No. 16:

Yes.

Answer to Direct Interrogatory No. 17:

No.

(Deposition of C. L. Cory.)

Answer to Direct Interrogatory No. 18:

No.

Answer to Direct Interrogatory No. 19:

The power factor of an alternating current motor is not constant but varies with the magnitude of the load and the design and construction of the motor.

Answer to Direct Interrogatory No. 20:

Yes.

Answer to Direct Interrogatory No. 21:

Yes.

Answer to Direct Interrogatory No. 22:

Yes. [747]

Answer to Direct Interrogatory No. 23:

Yes, by the use of incandescent lamps.

Answer to Direct Interrogatory No. 24:

Yes, provided the starting devices of the motor are properly adjusted and operated, and the motor is started without excessive load at the time of starting.

Answer to Direct Interrogatory No. 25:

The amount of electrical current in amperes required to start a simple squirrel cage type of induction motor depends as stated in the answer to Interrogatory No. 24 upon the adjustment of the starting device as well as the design and construction of the motor. The current in amperes may be as much as five times that required to operate the motor at full load. Again, adjustments may be made so that the starting current in amperes may be three times the current in amperes required to operate the motor at full load, and lastly depending entirely upon the

(Deposition of C. L. Cory.)

adjustment and operation of the starting device for the motor and the conditions under which it is started as regards whether under load or not, the starting current may be either less or equal to the current required to operate the motor at full load.

Answer to Direct Interrogatory No. 26:

This has been answered in Question 25, as regards the relative magnitude of the starting current and running current of induction motors.

Answer to Direct Interrogatory No. 27:

Not necessarily, as the current required to start the motor would depend upon the adjustment and operation of the starting devices, and whether the motor is started with its load upon it, or this load thrown upon the motor after it is started. [748]

Answer to Direct Interrogatory No. 28:

Yes.

Answer to Direct Interrogatory No. 29:

There is no such device practical or otherwise except an instantaneous circuit-breaker.

Answer to Direct Interrogatory No. 30:

The instantaneous circuit-breaker is the type in general use where the current is not to exceed a given amount.

Answer to Direct Interrogatory No. 31:

Yes, the instantaneous circuit-breaker is the proper appliance to be used under the conditions set forth in Interrogatory No. 30.

Answer to Direct Interrogatory No. 32:

The instantaneous circuit-breaker is the proper device to use, because it is the only type of circuit-breaker which will automatically open the instant

(Deposition of C. L. Cory.)

that the current exceeds a certain predetermined amount and the only circuit-breaker adjusted to open when the current equals the amount. Also the instantaneous circuit-breaker is the only type of circuit-breaker which will properly protect the generating station and the electrical apparatus therein operated from damage due to excessive currents and what is of more importance the instantaneous circuit-breaker is the only type of circuit-breaker which will protect the electrical service made available from such a central station so that there will be no excessive fluctuation of voltage or electric pressure, due to the excessive current over and above that which it is desired to be allowed to flow for even a short time. [749]

Excessive currents for a short time—meaning thirty seconds or approximately this amount of time—might not necessarily injure the electrical apparatus in the generating station merely because of its excessive quantity for a short time, but such excessive currents even for a short time might seriously interfere with the operation of such apparatus in giving satisfactory service to other customers, and in attempting to recompense for the sudden demand of current the operators might change the adjustment of the electrical controlling devices in the station so as to injure and damage to a considerable extent the electrical apparatus in the generating station used to produce the electric power.

Answer to Cross-interrogatory No. 1:

I am not now in the employ of Mr. F. W. Bradley

(Deposition of C. L. Cory.)

or any of his associates, except that I have been requested by Mr. Bradley to give this deposition. In the past few years, however, I have been from time to time employed as a Consulting Engineer by Mr. Bradley in connection with his various interests on different engineering matters that developed from time to time. I think it was during the month of November, 1910, that Mr. Bradley, for the Alaska Treadwell Gold Mining Company, I believe, requested me to render an opinion regarding the desirability of his company purchasing the water rights on Sheep Creek, which I have since ascertained was in relation to the matter now in dispute. This matter was considered upon the data given me by Mr. Bradley, and the various economic features of the situation gone over in considerable detail. I was therefore first consulted by Mr. Bradley in the matter now under consideration a little more than two years ago. [750]

Answer to Cross-interrogatory No. 2:

I have read the contract.

Answer to Cross-interrogatory No. 3:

Yes, and particularly are induction motors of the smaller sizes used on three-phase alternating current circuits more than synchronous motors.

Answer to Cross-interrogatory No. 4:

I have seen a synchronous motor in use upon a three-phase, alternating current circuit for a load of not to exceed 300 horse-power in the electrical laboratories at the University of California, where a motor of 175 horse-power is used primarily for the

(Deposition of C. L. Cory.)

reason that it operates at all loads with practically constant speed. I have also seen such synchronous motors in operation in the substations of the Pacific Gas & Electric Company where the alternating current is delivered to the synchronous motor and this motor is used to drive dynamos or electric generators for the production of direct current. I have also seen such small sized synochranous motors, less than 300 horse-power, in the substations of other electric light and power companies on the Pacific Coast.

Answer to Cross-interrogatory No. 5:

Not necessarily, as the power factor of an induction motor depends upon the manner in which it is used to drive the load and whether it is the only source of power which is used to operate the devices to be driven by it.

Answer to Cross-interrogatory No. 6:

I have observed a unity or 100% power factor where induction motors of less than 300 horse-power were operated from electrical circuits when upon those same circuits synchronous [751] motors were also operated, the use of these synchronous motors being primarily to control and adjust and usually to increase the power factor of the system. I have also observed a unity power factor in connection with the use of an induction motor of less than 300 horse-power where the dynamo known as an exciter in a power plant is driven jointly by an induction motor and in addition also driven either by a steam engine or small water-wheel.

(Deposition of C. L. Cory.)

Answer to Cross-interrogatory No. 7:

A wattmeter is the ordinary device or instrument used for measuring the power of an electric current, whether this power is measured in horse-power, watts, or kilowatts, which is equal to 1,000 watts.

Answer to Cross-interrogatory No. 8:

The power factor of an alternating current circuit is equal to the real or actual power divided by the apparent power, the power usually being expressed in watts. The apparent watts are equal to the product of the volts and amperes (in the three-phase system this must also be multiplied by the square root of three, or 1.732) but due to the character of apparatus to which the electric current is delivered and the character of use made of the current, the actual or real power in an alternating current circuit may be less than the apparent power.

The power factor is usually expressed in decimal fractions or in percentages. As an illustration, if an electric pressure of 100 volts causes the delivery or production of a current of twenty amperes to the load, or the electrical appliances receiving the electric current, which causes a power factor of 0.8 or 80% on a three-phase circuit, the apparent power is the product of 100 volts and 20 amperes and the square root of 3, or 1.732, which equals 3464 watts; while the actual or real power is $0.8 \times 100 \times 20 \times 1.732$, or 0.8×3464 watts, [752] or 2771.2 watts.

Answer to Cross-interrogatory No. 9:

Under the assumption stated in the question, and assuming the conditions of the furnishing of the

(Deposition of C. L. Cory.)

power were not in any manner further restricted, I would use a wattmeter to measure the power, but as there are an almost innumerable number of different settings of the circuit-breaker which would correspond to the different quantity of electric current so that the consumption would not exceed 300 real horse-power, the quantity of electric current depending entirely upon the power factor of the load, I would not necessarily set the circuit-breaker to any particular reading of the ammeter to fulfill conditions set forth in the question, assuming the reading of the voltameter or the voltage to be constant and a given amount.

Answer to Cross-interrogatory No. 10:

Not necessarily, although in mining operations in general a number of small induction motors would probably be the type of motors used, the aggregate or total power required for their combined operation at any one time being about 300 horse-power.

Answer to Cross-interrogatory No. 11:

I have answered the above question No. 10 in the affirmative, but I have had experience, especially at the Oneida Mine in Amador County, California, where a synchronous motor was used of a capacity of less than 300 horse-power, the particular reason for the use of the synchronous motor being to improve or increase the power factor of the load so that it would be as nearly unity or 100% as possible. I have known of other mines where synchronous motors of less than 300 horse-power were used, es-

(Deposition of C. L. Cory.)

pecially the Browns Valley Mine in Yuba County, California. [753]

Answer to Cross-interrogatory No. 12:

Under the assumptions given in the question that the motor is an induction motor of the ordinary type, and no other devices were connected to the circuit to improve the power factor, it would not be possible to render available and useful as much as 300 horse-power, but it must be borne in mind that it is quite possible to, even with the use of induction motors, install power factor correcting devices which would make it possible to use the power so as to get the entire 300 horse-power.

Without some such power factor correcting or improving devices, a wattmeter in the circuit would indicate that less than 300 horse-power was being used, but the amount that this power would be less than 300 horse-power would depend entirely upon the character of the load as affecting the power factor.

Answer to Cross-interrogatory No. 13:

Under the circumstances set forth in this question, if the power factor is 0.7 or 70% instead of unity or 100%, the current or amperes corresponding to 300 real or actual horse-power would be 80.3 amperes.

Answer to Cross-interrogatory No. 14:

Under the conditions stated in this question, the circuit-breaker should be set as stated in answer to question 13, namely, 80.3 amperes.

(Deposition of C. L. Cory.)

Answer to Cross-interrogatory No. 15:

Yes, the power factor would decrease ordinarily if a fractional instead of a full load were used in operating the same machinery, meaning induction motors, but under such fractional load it would not be necessary to change the setting of the circuit-breaker, as the reduction in the amount of current required due to the fractional load instead of the full load [754] would probably more than make up for the increase in the current necessary due to the reduced power factor on account of the fractional load.

Answer to Cross-interrogatory No. 16:

I mean that synchronous motors are in general use in all parts of the country for a variety of purposes.

Answer to Cross-interrogatory No. 17:

It is impossible for me to answer your question by giving specifically the number of instances of synchronous motors of 300 horse-power or less, and also the number of induction motors of 300 horse-power or less, that are within my own knowledge in general use, but in the smaller sizes of motors unquestionably by far the greater number are of the induction type, while in the larger sizes synchronous motors are extensively used, due to a number of reasons, primarily perhaps because such synchronous motors can very readily be operated to produce power and at the same time be adjusted and controlled so as to regulate the power factor of the electrical system to which they are connected.

Answer to Cross-interrogatory No. 18:

Although I answered direct interrogatory No. 24

(Deposition of C. L. Cory.)

in the affirmative, and not in the negative, I answer "Yes" to this question.

Answer to Cross-interrogatory No. 19:

The value of a thirty-second starting surge of 600 horse-power based solely upon what a horse-power is worth per annum would result in a practically negligible value of the starting surge lasting thirty seconds. Specifically, if the [755] horse-power is worth \$87.00 per annum, the value of a single thirty-second starting surge of 600 horse-power would not exceed five cents, but the cost to the power company of providing machinery and transmission lines of sufficient size to allow such starting surges of twice the normal use would be very considerable, particularly if the starting surge of 600 horse-power is a relatively large fraction of the total capacity of the plant.

Answer to Cross-interrogatory No. 20:

A monthly stoppage of three or four hours in the use of current, or the reduction of the loads at change of shift time would not in any degree compensate for starting surges, even of only thirty seconds duration, if the power is furnished from the plant in question, which I know to have only 2600 horse-power capacity, even when there is all the water necessary available. These surges require an increase in the size of the plant, increasing the investment necessary, and what is of more serious consequence, such surges interfere with the service given by the plant to all other circuits or customers. These starting surges require current of very low

(Deposition of C. L. Cory.)

power factor in the starting of the induction motors, which low power factor more than anything else interferes with the satisfactory operation of the electrical machinery in the power house.

Answer to Cross-interrogatory No. 21:

Yes.

Answer to Cross-interrogatory No. 22:

Yes, but only in case power factor improving devices are used, making the power factor practically 100%, in addition to the induction motors as set forth in the question. My [756] answer would be "No," providing only induction motors without power factor improving devices were connected to the circuit at the load.

Answer to Cross-interrogatory No. 23:

No. I have answered all the questions bearing fully and at all times in mind that 300 real or actual horse-power is to be rendered available.

Answer to Cross-interrogatory No. 24:

I have in answering each question when the point is involved set forth the difference between what is called real as distinguished from apparent power.

Answer to Cross-interrogatory No. 25:

The assumptions of this question can not consistently be made to fit into the assumptions found in each separate question, and each answer with its explanation speaks for itself.

C. L. CORY.

(Deposition of C. L. Cory.)

Subscribed and sworn to before me this 21st day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,
Notary Public in and for the City and County of San
Francisco, State of California. [757]

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

I, P. J. Kennedy, a duly appointed, qualified and acting Notary Public in and for the City and County of San Francisco, State of California, do hereby certify that the witness in the foregoing deposition named, C. L. CORY, was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that thereupon his foregoing deposition was taken by me in the City and County of San Francisco, State of California, on the 20th day of February, 1913, at the hour of two o'clock P. M. of said day, and thereafter until completed; that I propounded said direct interrogatories and cross-interrogatories to said witness; that said witness answered said interrogatories, both direct and cross, and his answers are fully set forth in the transcript of said deposition attached hereto. I further certify that Estelle Starstrand, a disinterested person, was appointed by me to act as shorthand reporter to take the testimony of said witness in shorthand, and thereafter reduce the same to longhand typewriting, and was by me first duly sworn for that purpose. That said answers of said witness C. L. CORY to said direct and cross-interrogatories were reduced to longhand typewriting by said Estelle Starstrand, and

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when completed as herein set forth, were carefully read by said witness, and after being corrected by him in every particular desired, were by him subscribed in my presence. That I thereupon wrapped and sealed the said deposition, and directed it to the Clerk of the District Court for the Territory of Alaska, Division No. 1, at Juneau, in which Court said action is pending, in the manner and pursuant to the terms of the stipulation of respective counsel for the respective parties attached hereto.

WITNESS my hand this 24th day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [758]

And the defendants, to further maintain the issues on their part, offered in evidence the deposition of W. J. Davis, the witness whose testimony was taken by deposition in the City of San Francisco and upon the stipulation attached to said deposition, and who testified on oath as narrated in said deposition, which said deposition of said W. J. Davis so taken was received and read in evidence and the testimony of the said W. J. Davis so given by deposition and received in evidence in this cause is as follows:

In the District Court for the Territory of Alaska Division No. 1, at Juneau.

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY,
Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Stipulation.

It is hereby stipulated that the deposition of W. J. Davis may be taken in response to the hereunto attached interrogatories, both direct and cross, and that such deposition may be taken before P. J. Kennedy, a notary public in and for the State of California, or before Grant H. Smith, a notary public in and for State of California, or before any other notary public without commission from the court; and when the deposition shall have been so taken it shall be returned by such notary, to the Clerk of the District Court, at Juneau, Alaska, as provided by law, and may be read in evidence on the trial in this case, subject to such objections as might be made if the witness were personally present and testifying orally

except that all objections as to the form of the question are hereby waived.

Dated this 30th day of January, 1913.

SHACKLEFORD & BAYLESS,

Z. R. CHENEY,

Attorneys for Plaintiff.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants. [759]

In the District Court for the Territory of Alaska, Division No. 1, at Juneau.

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Interrogatories to be Propounded to W. J. Davis.

Interrogatory No. 1:

State your name. Where do you reside?

Interrogatory No. 2:

What is your profession? State your calling.

Interrogatory No. 3:

If you state that you are by profession an electrical engineer, you may state fully at what school or

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schools you were educated as such electrical engineer, and what experience you have had as an electrical engineer. State in detail.

Interrogatory No. 4:

What is your present occupation and position, what duties do you perform in connection with the position occupied by you?

Interrogatory No. 5:

Do you know what constitutes a current of electricity of not to exceed 300 electric horse-power?

Interrogatory No. 6:

If you answer the preceding question by stating that you do know what constitutes a current of not to exceed 300 electric [760] horse-power, you may state of what such a current consists, stating your views fully and in detail upon this question.

Interrogatory No. 7:

What is the unit of electric power?

Interrogatory No. 8:

If you answer the preceding interrogatory by stating that a watt is the unit of electrical power, you may state what constitutes a watt.

Interrogatory No. 9:

The amperes and voltage of a three phase current being known, how do you determine the number of watts?

Interrogatory No. 10:

How many watts constitute an electric horse-power?

Interrogatory No. 11:

Where a current of not to exceed a given amount

(Deposition of C. L. Cory.)

of horse-power is spoken of and no mention is made of a power factor, what, if any, power factor is necessarily understood?

Interrogatory No. 12:

In a case where it is sought to make a current of not to exceed 300 horse-power available for the use of another, and nothing is said as to the use of which said power was to be applied, or the type of motors or other apparatus to be installed, or the manner or place of use, what power factor is understood, if any?

Interrogatory No. 13:

Where the place and manner of use is not specified, and the question of what type of motor, the place of use, the manner of installing the motor, and other matters [761] in connection with the operations of the motor, are left entire in the control of the person to whom the power is furnished and no particular power factor is mentioned or referred to, is it possible to supply any particular power factor as the power factor understood by the parties except unity power factor?

Interrogatory No. 14:

If you answer the preceding interrogatory by stating that it is not possible to supply or imply any power factor under the circumstances mentioned, except unity power factor, you may state your reasons why.

Interrogatory No. 15:

Where the current sought to be made available by a power company for the use of another is a current of not to exceed 300 electric horse-power to be taken

(Deposition of C. L. Cory.)

from and at the generating plant, and no mention is made of a power factor, and neither the type or form of motor to be used is specified or referred to, nor the place of use, the manner in which it is to be installed, how would you proceed to measure such a current, and what apparatus would you employ for that purpose is a case where the voltage is kept constant by means of a Tirril regulator?

Interrogatory No. 16:

Where an automatic instantaneous circuit-breaker is set so as to go out at about [762] 60 amperes on a three phase current with a voltage of 2300 impressed, would such apparatus permit the uninterrupted flow of a current of not to exceed 300 horsepower?

Interrogatory No. 17:

Where a current of not to exceed 300 electric horsepower is sought to be made available for the use of another, the current to be taken from and at the generating plant and no mention is made of a power factor, nothing being said concerning the type of motor, or other apparatus to be installed, or about the use to which the power is to be applied, as well as the type of motor used, the place of use, the manner of installing the motor, all being matters left to the control of the party to whom the power is furnished, could such a current be measured by means of a watt-meter which automatically takes in consideration the power factor?

Interrogatory No. 18:

You may state whether the power factor of the

(Deposition of C. L. Cory.)

various types of motors in use is the same.

Interrogatory No. 19:

You may state whether the power factor of a motor in use is constant, or whether the same varies depending upon the conditions of the load and other matters in connection with the operations carried on.

Interrogatory No. 20:

Can a synchronous motor be so adjusted and used so as to operate at unity power factor? [763]

Interrogatory No. 21:

Are synchronous motors in general use?

Interrogatory No. 22:

Can 300 electric horse-power be developed by means of a synchronous motor from a three phase current of about 56 amperes with a voltage of 2300 impressed?

Interrogatory No. 23:

At the generating plant will such a current furnish 300 horse-power for lighting purposes?

Interrogatory No. 24:

Can a motor requiring a current of 300 horse-power to operate be started with a current of 300 horse-power.

Interrogatory No. 25:

If you answer the preceding interrogatory by stating that such a motor cannot be started with the same amount of power that it requires to operate it, how much more power approximately does it require to start a simple squirrel cage motor of the induction type than it does to operate such motor?

Interrogatory No. 26:

(Deposition of C. L. Cory.)

What is the difference between the starting current and the running current of the various form of induction motors?

Interrogatory No. 27:

If a time relay circuit-breaker were installed on the transmission line of a motor requiring 300 horse-power to operate and such motor were operated by a current flowing over such line and the circuit-breaker being set to permit the flow of such current and such motor were brought [764] to a state of rest and were afterwards started and placed in operation would the current drawn at the time such motor was started be of greater horse-power than the current drawn when such motor was in continuous operation, the voltage being kept constant?

Interrogatory No. 28:

Would not a time relay circuit-breaker set so as to permit the flow of a current of 300 horse-power permit the taking of a current of greater horse-power for short periods of time?

Interrogatory No. 29:

Is there any other practical device by which the uninterrupted flow of a current could be limited to any given limit at all times except by means of an instantaneous circuit-breaker?

Interrogatory No. 30:

Where a current sought to be furnished or made available is to be a current of not to exceed a given electric horse-power, which, if any form of circuit-breaker is in general use, the instantaneous circuit-breaker or the time relay circuit-breaker?

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Interrogatory No. 31:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the form in general use, you may state whether it is the proper appliance to be used for such purpose. [765]

Interrogatory No. 32:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the proper appliance under the facts stated in the two preceding interrogatories, you may state why the use of such instantaneous circuit-breaker is proper. [766]

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING COM-
PANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Cross-interrogatories to be Propounded to C. L.

**Cory, W. J. Davis, C. E. Heise, E. A. Quinn,
A. M. Hunt and H. C. Parker.**

Cross-interrogatory No. 1:

Are you or have you recently been in the employ of F. W. Bradley or any of his associates or of C. O. Mills or any of the defendant companies?

Cross-interrogatory No. 2:

Attached to these cross-interrogatories you will find a copy of the contract in dispute in this action and before answering any of the questions, either direct or cross, please read this contract and bear the same in mind in answering the questions addressed to you.

Cross-interrogatory No. 3:

Is it not a fact that induction motors are used upon three-phase alternating currents by power consumers much more than synchronous motors? [767]

Cross-interrogatory No. 4:

Where have you seen a synchronous motor in use upon a three-phase alternating current for a load of not to exceed 300 horse-power?

Cross-interrogatory No. 5:

Is not the power factor less than unity wherever induction motors are used upon a three-phase alternating current?

Cross-interrogatory No. 6:

If you answer the last cross-interrogatory in the negative, state the conditions under which you have observed a unity power factor in connection with the use of an induction motor of 300 horse-power or less.

Cross-interrogatory No. 7:

What is the ordinary device or instrument for measuring horse-power upon an electric current where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent power?

Cross-interrogatory No. 8:

What is the accepted definition of power factor?

Cross-interrogatory No. 9:

Assuming in this case that it was the intention of the parties to deal in real and not apparent power and that the contract did not require the use of a synchronous motor and that the contract contemplated the use of the power contracted for in mining operations, would you not measure the power by means of a wattmeter and [768] set your circuit-breaker according to the reading of your ammeter and voltameter at the instant when your wattmeter showed a consumption of 300 real horse-power?

Cross-interrogatory No. 10:

Assuming that it was the intention of the parties to the contract that the 300 horse-power called for therein was to be used in ordinary mining operations, would it not be reasonable to expect that the power would be applied to induction motors?

Cross-interrogatory No. 11:

If you answer the last question in the negative, state what observation and experience you have had with reference to the use of motors in connection with mining which would justify you in assuming that synchronous motors are commonly used in mining operations upon loads of 300 horse-power or less.

Cross-interrogatory No. 12:

If you answer direct interrogatory No. 16 to the effect that the apparatus mentioned in that interrogatory would permit the uninterrupted flow of a current not to exceed 300 horse-power, assume that the motor upon such current is an induction motor of the ordinary type and not a synchronous motor, can the benefit and use of 300 horse-power be secured under the conditions named in interrogatory [769] No. 18, would not a wattmeter indicate under such a setting that less than 300 horse-power was being taken?

Cross-interrogatory No. 13:

If you answer direct interrogatory No. 19 in the affirmative, that is to the effect that the power factor will vary depending upon the condition of the load and other matters in connection with the operations carried on, assume for the purposes of this question that the contract called for the delivery of real and not apparent power, assume that the power factor is 70 instead of unity and that the voltage is 2,300 volts, at what amperage would your circuit-breaker be set so as to permit the use of 300 real horse-power?

Cross-interrogatory No. 14:

Having answered the last question and assuming that the power factor is 70 when the full load of 300 horse-power is taken and that the power factor has been determined under normal conditions, if these conditions are maintained and not changed, should the circuit-breaker not remain as stated in answer to your last question?

Cross-interrogatory No. 15:

Assuming the conditions named in the last two

cross-interrogatories, is it not a fact that the power [770] factor would decrease if a fractional instead of a full load were used in operating the same machinery? Under such fractional load, however, would you have to change the setting of the circuit-breaker so as to prevent the taking of more than the maximum of real power called for?

Cross-interrogatory No. 16:

If you answer direct interrogatory No. 21 in the affirmative, state what you mean by synchronous motors being in general use.

Cross-interrogatory No. 17:

If you answer direct interrogatory No. 21 in the affirmative, state specifically the number of instances of synchronous motors of 300 horse-power or less, within your own knowledge, that are in use and state also the number of induction motors of 300 horse-power or less that are in general use.

Cross-interrogatory No. 18:

If you answer direct interrogatory No. 24 in the negative, state whether a motor requiring 300 horse-power to operate can be started from a plant with sufficient water-power available to generate 300 horse-power.

Cross-interrogatory No. 19:

Assuming horse-power to be worth \$87.00 per annum, what is the value of a thirty-second starting surge of 600 horse-power? [771]

Cross-interrogatory No. 20:

Assuming ordinary stoppages at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse-power, would

not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from four to five times during a month?

Cross-interrogatory No. 21:

Where the beneficial use of 300 horse-power is contemplated by the parties to a contract and synchronous motors are not contemplated but the ordinary type of motor is contemplated and in actual use, is it possible to obtain the uninterrupted and beneficial use of 300 horse-power without taking a starting surge of more than 300 horse-power?

Cross-interrogatory No. 22:

If the beneficial and uninterrupted use of 300 real horse-power is contemplated by the parties and ordinary types of induction motor are in use as contemplated, can such use be obtained with an instantaneous circuit-breaker set at 56 amperes with a voltage of 2,300 volts? [772]

Cross-interrogatory No. 23:

You have answered the direct interrogatories propounded by the defendants in this case. Is it not a fact that all of these answers are based upon the assumption of making available 300 apparent horse-power as distinguished from 300 real horse-power?

Cross-interrogatory No. 24:

If you answer the last question in the negative, point out how many and what of your answers, giving the number of the same, contemplate the use of real as distinguished from apparent power, assuming that the party to the contract contemplated the use of induction motors of the ordinary type and not the use of synchronous motors.

Cross-interrogatory No. 25:

Assuming that the direct interrogatories in this action, Nos. 5 to 32, inclusive, call upon you to answer in terms of real instead of apparent power and under ordinary conditions with reference to the use of induction motors, it being assumed that the use of induction motors of the ordinary type was contemplated by the parties, answer each one of the questions in terms of real power, under the assumption that the parties contemplated the use of induction motors [773] of the ordinary type.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff. [774]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and The Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold P. J. K. Mining Company hereinafter called the N. P. lessees.

WITNESSETH, First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to-wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71 B. The Belvedere Mill-site U. S. Mineral Entry No. 25, lot 72 B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No.

260 on the meander line of Gastineau Channel; thence first course along the meander line of Gastineau Channel at ordinary high water mark

P. J. K. N. $52^{\circ} 00'$ W. 54 feet to stake No. 2;

N. P. thence second course N. $48 15'$ E. 200 feet to stake No. 3; thence S. $52.00'$ E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one quarter of an acre more or less, courses expressed from the true meridian, Mag. Var. $29.30'$; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three-quarters of a mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the saw-mill, boarding-house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said saw-mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-five (\$125.00) Dollars per month; payable in gold coin of the United States on the first day of each month during the

P. J. K. term of said lease at the office of the lessees

N. P. at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful

for the lessor to re-enter said premises and
P. J. K. remove all persons therefrom, and the
N. P. lessees do hereby covenant, promise and
agree to pay the lessor the said rent in the
manner hereinbefore specified, and not to let or
underlet the whole or any part of said premises with-
out a written consent of the lessor, nor to assign this
lease or any part thereof without said written con-
sent, and at the expiration of said term the party of
the second part will quit and surrender said prem-
ises in as good state and condition as the same now
are.

P. J. K. It is the intention of the lessees to erect,
N. P. equip and maintain upon said premises a
water-power plant of substantial size and
efficiency for the generation of electric power, and
if at any time after Two (2) years from the date
hereof the lessor or its assigns shall elect to take a
current of not to exceed three hundred (300) electric
horse-power which shall be taken from and at the
generating plant to be installed upon the leased
premises hereinbefore described, the lessees under-
take, covenant and agree to deliver said current to
the lessor or its assigns upon the execution and deliv-
ery by the lessor or its assigns to the lessee of a deed
or deeds conveying said leased property

P. J. K. herein described to the parties of the sec-
N. P. ond part. If prior to the expiration of
nine years from the date hereof the lessor
does not elect to convey to lessees or their

P. J. K. [775] assigns the property herein leased
N. P. and accept in full consideration therefor

the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000.) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one-quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them, they shall become the property of

P. J. K. the lessor and remain covered by this lease

N. P. and subject to all the terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge

P. J. K. thereon, so that any successor or successors

N. P. in interest to the lessor and or to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their

option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

P. J. K. If neither of the options herein provided
N. P. for are accepted by either the lessor or the lessees then the property and rights herein described with all the improvements that are or that may be hereafter placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written. Executed in triplicate.

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY,

WALLACE HACKETT,

President.

And HENRY ENDICOTT,

Treasurer.

ALASKA TREADWELL GOLD MINING
COMPANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary. [776]

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Co., the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such Corporations executed the same.

In Witness Whereof, I have hereunto set my hand

and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

F. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Treadwell Gold Mining Co., the Corporation that executed the within and foregoing instrument and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

Commonwealth of Massachusetts,

County of Suffolk,

City of Boston,—ss.

Be it remembered, that on this 14th day of October, 1909, before me, the undersigned, a Notary Pub-

lie in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a Corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such president and Treasurer; and said Henry Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation, executed the foregoing instrument for and on behalf of said Corporation as the free and voluntary act of said corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by me first duly sworn on his oath states that he is Treasurer of said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation, and that the seal hereinbefore affixed is the corporate seal of said Corporation, and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof, I have hereunto set my hand and seal the day and year first above written.

[Seal]

LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913. [777]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY, (a
Corporation),

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY (a Corporation), ALASKA UNITED
GOLD MINING COMPANY (a Corpora-
tion), ALASKA MEXICAN GOLD MIN-
ING COMPANY (a Corporation), and ROB-
ERT A. KINZIE,

Defendants.

Deposition of Wm. J. Davis, Jr. [for Defendants].

BE IT REMEMBERED that pursuant to the stipulation of Counsel for the respective parties in the above-entitled action, attached hereto, together with the interrogatories, both direct and cross, also attached hereto, on the 20th day of February, 1913, in the City and County of San Francisco, State of California, before me, P. J. Kennedy, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared Wm. J. Davis, Jr., a witness produced on behalf of the defendants in the above-entitled action, now pending in said Court, who being by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in said cause, and to whom I propounded said interrogatories, both direct and cross, testified as follows: [778]

(Deposition of Wm. J. Davis, Jr.)

Answer to Direct Interrogatory No. 1:

Wm. J. Davis, Jr.; San Francisco, California.

Answer to Direct Interrogatory No. 2:

Electrical and Mechanical Engineer.

Answer to Direct Interrogatory No. 3:

Graduate of Rose Polytechnic Institute, degree B. S.; also Post-graduate Degree M. S.; member of American Institute of Electrical Engineers; member of American Society of Mechanical Engineers; Associate Member of American Institute of Mining Engineers; Associate Member of American Electro-Chemical Society; Twenty years as Electrical Engineer with the General Electric Company as designer of electric generators, motors, electric locomotives and other apparatus, power plants and railway systems. Engineer in charge of design and construction of electrical installation of Albany and Hudson Railway & Power Co., Detroit River Tunnel electrification, Havana Central Railway, West Jersey & Sea Shore Railroad; participated in New York Central terminal electrification and construction of numerous interurban railroads in this country and abroad.

Answer to Direct Interrogatory No. 4:

Present occupation—Engineer, Pacific Coast District, General Electric Company. Have charge of all construction work for Company in this district. Since taking present position, have been responsible for installation of electrical equipment of steam turbine and hydraulic plants exceeding 300,000 H. P., the most prominent of these being the Big Bend

(Deposition of Wm. J. Davis, Jr.)

plant of the [779] Great Western Power Company on the Feather River, the hydraulic power plant of the Sierra & San Francisco Power Company on the Stanislaus River, and steam turbine plants of the Pacific Gas & Electric Company, Great Western Power Company, Southern California Edison Company, and Pacific Light & Power Corporation of Los Angeles.

Answer to Direct Interrogatory No. 5:

Yes.

Answer to Direct Interrogatory No. 6:

A current of not to exceed 300 electric h. p. will be that quantity of electric current which would exist in an electric circuit, the voltage being constant, when 223,800 units of electric power are being delivered. This is always true without modification in case of a direct current system, but in case of an alternating current system, the nature of the machinery or apparatus utilizing the electric power may be such as to cause a distortion or angular change in the relationship of voltage or electric pressure of the current which would increase the amount of electric current as determined above.

Answer to Direct Interrogatory No. 7:

The absolute unit of electric power is called a watt. The commercial unit consists of a thousand watts and is known as a kilowatt.

Answer to Direct Interrogatory No. 8:

A watt may be defined as the amount of power produced by an electric current of one ampere when flowing under the direct and immediate action of an

(Deposition of Wm. J. Davis, Jr.)

electric pressure of one volt. The number of watts delivered by an electric circuit is measured by the product of the instantaneous values of volts and amperes. [780]

Answer to Direct Interrogatory No. 9:

The amperes and voltage of a 3-phase system, as measured by the usual instruments, represent the average values of these quantities. The number of watts may be determined by the product of volts times amperes times 1.73, the latter being a constant for a 3-phase system, provided the nature of the load is such as to cause no displacement in the effective relationship of the current and voltage to each other.

Answer to Direct Interrogatory No. 10:

An electric horse-power consists of 746 watts.

Answer to Direct Interrogatory No. 11:

According to the standardization Rules of the American Institute of Electrical Engineers, which are generally accepted as authoritative, the power factor of a system is understood to be unity unless otherwise stated. The specific rule applying to this question is known as No. 74-A and may be found in the August, 1911, number of the Proceedings of the American Institute of Electrical Engineers. This rule, which I and other engineers adopt in our practice, is as follows:

“Power Factor. Since the inherent capacity of alternating current generators, synchronous motors, and transformers, depend upon their voltage and their current, they should be rated in kilovolt-amperes. If the apparatus is rated

(Deposition of Wm. J. Davis, Jr.)

in kilowatts without specification as to the power factor, a power factor of 100 per cent shall be understood.

If rated in kilowatts and a power factor other than 100 per cent be specified, this should be understood as defining only the nature of the load, and not as implying an increase in the ampere rating of the apparatus, which should be based upon the kilowatt rating at 100 per cent power factor."

Answer to Direct Interrogatory No. 12:

Under the conditions stated, a power factor of 100 per cent would be understood. [781]

Answer to Direct Interrogatory No. 13:

No.

Answer to Direct Interrogatory No. 14:

Bearing in mind the conditions given in Interrogatory No. 13, my reasons for stating that it is not possible to supply or imply any particular power factor under the circumstances mentioned are as follows:

a. The power factor of any system taking electric current at a given point is dependent upon the nature of the load and character of the apparatus to which power is supplied and on no other conditions.

b. The capacity of generators, transformers, instruments, switches and feeder system of the parties furnishing the power is fixed by the amount of current taken and not necessarily by the power as determined by wattmeter readings.

c. The power factor being variable and beyond

(Deposition of Wm. J. Davis, Jr.)

the control of the operators, it must be assumed as not materially less than unity in order to determine the proper limit of the current to be taken.

Answer to Direct Interrogatory No. 15:

I would proceed to measure such current by means of an ammeter.

Answer to Direct Interrogatory No. 16:

Yes.

Answer to Direct Interrogatory No. 17:

A wattmeter would not be suitable for measuring the electric current under the conditions stated.

Answer to Direct Interrogatory No. 18:

No.

Answer to Direct Interrogatory No. 19:

The power factor of motors is variable, depending upon the conditions of the load and the inherent characteristics of [782] the motors.

Answer to Direct Interrogatory No. 20:

Yes, approximately.

Answer to Direct Interrogatory No. 21:

Yes.

Answer to Direct Interrogatory No. 22:

Yes.

Answer to Direct Interrogatory No. 23:

Yes.

Answer to Direct Interrogatory No. 24:

Yes, under certain conditions depending upon the method of starting and nature of devices used, also upon relation of starting torque to full rated torque.

Answer to Direct Interrogatory No. 25:

A simple squirrel cage motor may in many cases

(Deposition of Wm. J. Davis, Jr.)

be started with less than full load current if the proper devices are used. Under conditions where the motor is required to start under full load torque, the current taken from the line will be about three times the rated current of the motor when starting compensators are used, and if compensators are not used or the starting torque greatly exceeds the full load torque, the starting current may be five and one-half to six times full rated current.

Answer to Direct Interrogatory No. 26:

There are two types of induction motors in general use—the “squirrel cage” type and the “slip ring” type. The slip ring type of motor is started by a resistance in the rotor circuit and the starting current is usually about one-half to one-third that of the squirrel cage motor. The slip ring motor may usually be started under full load torque conditions at one and one-quarter [783] to one and one-half times full load current, and if the starting torque can be sufficiently reduced by mechanical or other devices, the starting current may be less than full load current.

Answer to Direct Interrogatory No. 27:

Not necessarily, for the reason that it is usually feasible to use a method of starting which will reduce the current demand to a minimum.

Answer to Direct Interrogatory No. 28:

Yes.

Answer to Direct Interrogatory No. 29:

I know of no other device than the automatic circuit-breaker.

(Deposition of Wm. J. Davis, Jr.)

Answer to Direct Interrogatory No. 30:

The instantaneous circuit-breaker is generally used unless a time limit is specified in the power contract.

Answer to Direct Interrogatory No. 31:

Yes, it is.

Answer to Direct Interrogatory No. 32:

The use of an instantaneous circuit-breaker is proper because it protects the system against injury due to the possibility of the demand for power exceeding the capacity of the system. It is also used to protect the system against injurious variations in voltage caused by excessive fluctuations in load at a particular point. The latter service is often of greater value than the former as the indirect losses from injuries to service may be many times greater than the direct losses due to overloading or other damage to the apparatus. [784]

Answer to Cross-interrogatory No. 1:

No.

Answer to Cross-interrogatory No. 2:

Have read the contract in question.

Answer to Cross-interrogatory No. 3:

Yes, in the small sizes, but in the large sizes, synchronous motors are more generally used. About three-fourths of the load carried by the Stanislaus plant of the Sierra & San Francisco Power Company consists of synchronous motors. There are fourteen of these motors rated at 1500 Kw. each (total 21,000 Kw.).

Answer to Cross-interrogatory No. 4:

I have seen not more than three or four of these

(Deposition of Wm. J. Davis, Jr.)

synchronous motors at the Schenectady Works of the General Electric Company. The General Electric manufactures standard synchronous motors of 250 and 100 I. P., but for various reasons the demand for these small synchronous motors is restricted.

Answer to Cross-interrogatory No. 5:

Not materially less than unity if proper corrective devices are provided.

Answer to Cross-interrogatory No. 6:

I have observed unity power factor upon systems where synchronous motors or condensers were used to regulate the power factor.

Answer to Cross-interrogatory No. 7:

If by "real" power is meant kilowatts and by "apparent" power is meant kilovolt-amperes, a wattmeter would be the proper [785] instrument to use for measuring the former and an ammeter and voltameter for measuring the latter.

Answer to Cross-interrogatory No. 8:

Power factor is usually defined as the ratio of watts to volt-amperes.

Answer to Cross-interrogatory No. 9:

While the wattmeter could successfully be used for determining the energy component of the current under full load conditions, the setting of the circuit-breaker under such conditions would be indefinite and indeterminate, because the power factor would be variable.

Answer to Cross-interrogatory No. 10:

Not necessarily, as the power may be used for a large number of miscellaneous purposes, such as lighting

(Deposition of Wm. J. Davis, Jr.)

and electrolytic work, tram-ways, etc., requiring direct current where the character of the load would be such as to give unity power factor.

Answer to Cross-interrogatory No. 11:

Synchronous motors are frequently used to drive air compressors and to convert alternating current into direct current for the operation of mine locomotives.

Answer to Cross-interrogatory No. 12:

If the plant equipment were properly broken up into a number of small units instead of one large one and the power factor corrected by the use of a rotary condenser or other device in common use, my answer to this question would be No.

Answer to Cross-interrogatory No. 13:

81 amperes. [786]

Answer to Cross-interrogatory No. 14:

Yes, if it is the intention to deliver 300 H. P. at 70% power factor.

Answer to Cross-interrogatory No. 15:

No, it would not be necessary to change the setting of the circuit-breaker.

Answer to Cross-interrogatory No. 16:

Synchronous and induction motors occupy different fields. The induction motor is the cheaper in the smaller sizes and simpler to operate as no auxiliary exciter is required. In large units, however, there is little difference in price but the synchronous motor is usually preferred on account of higher efficiency and power factor, closer speed regulation and greater reliability due to possibility of using large clearances

(Deposition of Wm. J. Davis, Jr.)

between the moving and stationary elements.

Answer to Cross-interrogatory No. 17:

The only small synchronous motors used in this district of which I have direct knowledge are two 200 Kw. units operating on the system of the Oro Water, Light & Power Company and used until recently as power factor regulators, but which have since been replaced by larger machines. On the other hand, there are thousands of induction motors of less than 300 H. P. in general use on the Pacific Coast.

Answer to Cross-interrogatory No. 18:

This question was not answered in the negative.

Answer to Cross-interrogatory No. 19:

The value in kilowatts of a thirty second starting surge of 600 H. P. as measured by the amount of water used will be 5¢, but the value as representing interest charges, maintenance [787] and operating costs applying to generator, transformer and distributing capacity will vary from \$20,000 to \$50,000 per annum.

Answer to Cross-interrogatory No. 20:

No, on account of the bad effect on the regulation of a system such as the one under consideration, which I am informed has a capacity of only 2000 kw. The effect of the low power factor of a 300 H. P. squirrel cage induction motor when starting would ordinarily be three to nine times as bad as would be the case if the motor were started at unity power factor. The indirect losses from such injury to the regulation might prove to be a serious matter.

(Deposition of Wm. J. Davis, Jr.)

Answer to Cross-interrogatory No. 21:

Yes.

Answer to Cross-interrogatory No. 22:

Yes, if devices be used to raise the power factor to the proper amount.

Answer to Cross-interrogatory No. 23:

No.

Answer to Cross-interrogatory No. 24:

My answer to this question is that corrective devices may be used to improve the power factor where objectionably low.

Answer to Cross-interrogatory No. 25:

These assumptions conflict with the assumptions made in the direct interrogatories and the replies thereto are not restricted to the conditions outlined in this cross-interrogatory. In answering the direct interrogatories, I have had in mind the kilowatts consumed, understanding that it is perfectly feasible [788] to use corrective devices for improving the power factor.

WM. M. J. DAVIS, JR.

Subscribed and sworn to before me this 21st day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [789]

State of California,

City and County of San Francisco,—ss.

I, P. J. Kennedy, a duly appointed, qualified and acting Notary Public in and for the City and County

(Deposition of Wm. J. Davis, Jr.)

of San Francisco, State of California, do hereby certify that the witness in the foregoing deposition named, Wm. J. Davis, Jr., was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that thereupon his foregoing deposition was taken by me in the City and County of San Francisco, State of California, on the 20th day of February, 1913, at the hour of two o'clock P. M. of said day, and thereafter until completed; that I propounded said direct interrogatories and cross-interrogatories to said witness; that said witness answered said interrogatories, both direct and cross, and his answers are fully set forth in the transcript of said deposition attached hereto. I further certify that Estelle Starstrand, a disinterested person, was appointed by me to act as shorthand reporter to take the testimony of said witness in shorthand, and thereafter reduce the same to longhand typewriting, and was by me first duly sworn for that purpose. That said answers of said witness Wm. J. Davis, Jr., to said direct and cross-interrogatories were reduced to longhand typewriting by said Estelle Starstrand, and when completed as herein set forth, were carefully read over by said witness, and after being corrected by him in every particular desired, were by him subscribed in my presence. That I thereupon wrapped and sealed the said deposition, and directed it to the Clerk of the District Court of the Territory of Alaska, Division No. 1, at Juneau, in which court said action is pending, in the manner and pursuant to the terms of the stipulation of respective counsel

for the respective parties attached hereto.

WITNESS my hand this 21st day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [790]

And the defendants to further maintain the issues on their part offered in evidence the deposition of A. M. Hunt, the witness whose testimony was taken by deposition in the City of San Francisco and upon the stipulation attached to said deposition, and who testified on oath as narrated in said deposition, which said deposition of said A. M. Hunt so taken was received and read in evidence and the testimony of the said A. M. Hunt so given by deposition and received in evidence in this cause is as follows:

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY,
Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendant.

Stipulation.

It is hereby stipulated that the deposition of A. M. Hunt may be taken in response to the hereunto attached interrogatories, both direct and cross, and that such deposition may be taken before P. J. Kennedy, a notary public in and for the State of California, or before Grant H. Smith, a notary public in and for State of California, or before any other notary public, without commission from the Court; and when the deposition shall have been so taken it shall be returned by such notary, to the Clerk of the District Court, at Juneau, Alaska, as provided by law, and may be read in evidence on the trial in this case, subject to such objections as might be made if the witness were personally present and testifying orally except that all objections as to the form of the question are hereby waived.

Dated this 30th day of January, 1913.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Paintiff.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants. [791]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Interrogatories to be Propounded to A. M. Hunt.

Interrogatory No. 1:

State your name, where do you reside?

Interrogatory No. 2:

What is your profession. State your calling.

Interrogatory No. 3:

If you state that you are by profession an electrical engineer, you may state fully at what school or schools you were educated as such electrical engineer, and what experience you have had as an electrical engineer. State in detail.

Interrogatory No. 4:

What is your present occupation and position, what duties do you perform in connection with the position occupied by you?

Interrogatory No. 5:

Do you know what constitutes a current of electricity of not to exceed 300 electric horse-power?

Interrogatory No. 6:

If you answer the preceding question by stating that you do know what constitutes a current of not to exceed 300 electric [792] horse-power, you may state of what such a current consists, stating your views fully and in detail upon this question.

Interrogatory No. 7:

What is the unit of electric power?

Interrogatory No. 8:

If you answer the preceding interrogatory by stating that a watt is the unit of electrical power, you may state what constitutes a watt.

Interrogatory No. 9:

The amperes and voltage of a three phase current being known, how do you determine the number of watts?

Interrogatory No. 10:

How many watts constitute an electric horse-power?

Interrogatory No. 11:

Where a current of not to exceed a given amount of horse-power is spoken of and no mention is made of a power factor, what, if any power factor is necessarily understood?

Interrogatory No. 12:

In a case where it is sought to make a current of not to exceed 300 horse-power available for the use of another, and nothing is said as to the use of which said power was to be applied, or the type of motors or other apparatus to be installed, or the manner or

place of use, what power factor is understood, if any?

Interrogatory No. 13:

Where the place and manner of use is not specified, and the question of what type of motor, the place of use, the manner of installing the motor, and other matters [793] in connection with the operations of the motor, are left entire in the control of the person to whom the power is furnished and no particular power factor is mentioned or referred to, is it possible to supply any particular power factor as the power factor understood by the parties except unity power factor.

Interrogatory No. 14:

If you answer the preceding interrogatory by stating that it is not possible to supply or imply any power factor under the circumstances mentioned, except unity power factor, you may state your reasons why.

Interrogatory No. 15:

Where the current sought to be made available by a power company for the use of another is a current of not to exceed 300 electric horse-power to be taken from and at the generating plant, and no mention is made of a power factor, and neither the type or form of motor to be used is specified or referred to, nor the place of use, the manner in which it is to be installed, how would you proceed to measure such a current, and what apparatus would you employ for that purpose in a case where the voltage is kept constant by means of a Tirril regulator?

Interrogatory No. 16:

Where an automatic instantaneous circuit-breaker

is set so as to go out at about [794] 60 amperes on a three phase current with a voltage of 2300 impressed, would such apparatus permit the uninterrupted flow of a current of not to exceed 300 horsepower?

Interrogatory No. 17:

Where a current of not to exceed 300 electric horsepower is sought to be made available for the use of another, the current to be taken from and at the generating plant and no mention is made of a power factor, nothing being said concerning the type of motor, or other apparatus to be installed, or about the use to which the power is to be applied, as well as the type of motor used, the place of use, the manner of installing the motor, all being matters left to the control of the party to whom the power is furnished, could such a current be measured by means of a wattmeter which automatically takes in consideration the power factor?

Interrogatory No. 18:

You may state whether the power factor of the various types of motors in use is the same.

Interrogatory No. 19:

You may state whether the power factor of a motor in use is constant, or whether the same varies depending upon the conditions of the load and other matters in connection with the operations carried on.

Interrogatory No. 20:

Can a synchronous motor be so adjusted and used so as to operate at unity power factor? [795]

Interrogatory No. 21:

Are synchronous motors in general use?

Interrogatory No. 22:

Can 300 electric horse-power be developed by means of a synchronous motor from a three phase current of about 56 amperes with a voltage of 2300 impressed?

Interrogatory No. 23:

At the generating plant will such a current furnish 300 horse-power for lighting purposes?

Interrogatory No. 24:

Can a motor requiring a current of 300 horse-power to operate be started with a current of 300 horse-power?

Interrogatory No. 25:

If you answer the preceding interrogatory by stating that such a motor cannot be started with the same amount of power that it requires to operate it, how much more power approximately does it require to start a simple squirrel cage motor of the induction type than it does to operate such motor?

Interrogatory No. 26:

What is the difference between the starting current and the running current of the various forms of induction motors?

Interrogatory No. 27:

If a time relay circuit-breaker were installed on the transmission line of a motor requiring 300 horse-power to operate and such motor were operated by a current flowing over such line and the circuit-breaker being set to permit the flow of such current and such motor were brought [796] to a state of rest and were afterwards started and placed in operation would the current drawn at the time such motor was

started be of greater horse-power than the current drawn when such motor was in continuous operation, the voltage being kept constant?

Interrogatory No. 28:

Would not a time relay circuit-breaker set so as to permit the flow of a current of 300 horse-power permit the taking of a current of greater horse-power for short periods of time?

Interrogatory No. 29:

Is there any other practical device by which the uninterrupted flow of a current could be limited to any given limit at all times except by means of an instantaneous circuit-breaker?

Interrogatory No. 30:

Where a current sought to be furnished or made available is to be a current of not to exceed a given electric horse-power, which, if any form of circuit-breaker is in general use, the instantaneous circuit-breaker or the time relay circuit breaker?

Interrogatory No. 31:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the form in general use, you may state whether it is the proper appliance to be used for such purpose. [797]

Interrogatory No. 32:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the proper appliance under the facts stated in the two preceding interrogatories, you may state why the use of such instantaneous circuit-breaker is proper.

[798]

In the District Court for the District of Alaska, Division No. 1, at Juneau.

No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Cross-interrogatories to be Propounded to C. L. Corey, W. J. Davis, C. E. Heise, E. A. Quinn, A. M. Hunt and H. C. Parker.

Cross-interrogatory No. 1:

Are you or have you recently been in the employ of F. W. Bradley or any of his associates or of O. Mills or any of the defendant companies?

Cross-interrogatory No. 2:

Attached to these cross-interrogatories you will find a copy of the contract in dispute in this action and before answering any of the questions, either direct or cross, please read this contract and bear the same in mind in answering the questions addressed to you.

Cross-interrogatory No. 3:

Is it not a fact that induction motors are used upon

three-phase alternating currents by power consumers much more than synchronous motors? [799]

Cross-interrogatory No. 4:

Where have you seen a synchronous motor in use upon a three-phase alternating current for a load of not to exceed 300 horse-power?

Cross-interrogatory No. 5:

Is not the power factor less than unity wherever induction motors are used upon a three-phase alternating current?

Cross-interrogatory No. 6:

If you answer the last cross-interrogatory in the negative, state the conditions under which you have observed a unity power factor in connection with the use of an induction motor of 300 horse-power or less.

Cross-interrogatory No. 7:

What is the ordinary device or instrument for measuring horse-power upon an electric current where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent power?

Cross-interrogatory No. 8:

What is the accepted definition of power factor?

Cross-interrogatory No. 9:

Assuming in this case that it was the intention of the parties to deal in real and not apparent power and that the contract did not require the use of a synchronous motor and that the contract contemplated the use of the power contracted for in mining operations, would you not measure the power by means of a wattmeter and set your circuit-breaker [800] according to the reading of your ammeter and

voltemeter at the instant when your wattmeter showed a consumption of 300 real horse-power.

Cross-interrogatory No. 10:

Assuming that it was the intention of the parties to the contract that the 300 horse-power called for therein was to be used in ordinary mining operations, would it not be reasonable to expect that the power would be applied to induction motors?

Cross-interrogatory No. 11:

If you answer the last question in the negative, state what observation and experience you have had with reference to the use of motors in connection with mining which would justify you in assuming that synchronous motors are commonly used in mining operations upon loads of 300 horse-power or less.

Cross-interrogatory No. 12:

If you answer direct interrogatory No. 16 to the effect that the apparatus mentioned in that interrogatory would permit the uninterrupted flow of a current not to exceed 300 horse-power, assume that the motor upon such current is an induction motor of the ordinary type and not a synchronous motor, can the benefit and use of 300 horse-power be secured under the conditions named in interrogatory No. 18, would not a wattmeter [801] indicate under such a setting that less than 300 horse-power was being taken?

Cross-interrogatory No. 13:

If you answer direct interrogatory No. 19 in the affirmative, that is to the effect that the power factor will vary depending upon the condition of the load and other matters in connection with the operations

carried on, assume for the purposes of this question that the contract called for the delivery of real and not apparent power, assume that the power factor is 70 instead of unity and that the voltage is 2300 volts, at what amperage would your circuit-breaker be set so as to permit the use of 300 real horse-power?

Cross-interrogatory No. 14:

Having answered the last question and assuming that the power factor is 70 when the full load of 300 horse-power is taken and that the power factor has been determined under normal conditions, if these conditions are maintained and not changed, should the circuit-breaker not remain as stated in answer to your last question?

Cross-interrogatory No. 15:

Assuming the conditions named in the last two cross-interrogatories, is it not a fact that the power factor would decrease if a fractional instead of a full load were used in operating the same machinery? Under such fractional [802] load, however, would you have to change the setting of the circuit-breaker so as to prevent the taking of more than the maximum of real power called for?

Cross-interrogatory No. 16:

If you answer direct interrogatory No. 21 in the affirmative, state what you mean by synchronous motors being in general use.

Cross-interrogatory No. 17:

If you answer direct interrogatory No. 21 in the affirmative, state specifically the number of instances of synchronous motors of 300 horse-power or less, within your own knowledge, that are in use and state

also the number of induction motors of 300 horse-power or less that are in general use.

Cross-interrogatory No. 18:

If you answer direct interrogatory No. 24 in the negative, state whether a motor requiring 300 horse-power to operate can be started from a plant with sufficient water-power available to generate 300 horse-power.

Cross-interrogatory No. 19:

Assuming horse-power to be worth \$87.00 per annum, what is the value of a thirty-second starting surge of 600 horse-power? [803]

Cross-interrogatory No. 20:

Assuming ordinary stoppages at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse-power, would not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from four or five times during a month?

Cross-interrogatory No. 21:

Where the beneficial use of 300 horse-power is contemplated by the parties to a contract and synchronous motors are not contemplated but the ordinary type of motor is contemplated and in actual use, is it possible to obtain the uninterrupted and beneficial use of 300 horse-power without taking a starting surge of more than 300 horse-power?

Cross-interrogatory No. 22:

If the beneficial and uninterrupted use of 300 real horse-power is contemplated by the parties and ordinary types of induction motor are in use as contem-

plated, can such use be obtained with an instantaneous circuit-breaker set at 56 amperes with a voltage of 2300 volts? [804]

Cross-interrogatory No. 23:

You have answered the direct interrogatories propounded by the defendants in this case. Is it not a fact that all of these answers are based upon the assumption of making available 300 apparent horsepower as distinguished from 300 real horsepower?

Cross-interrogatory No. 24:

If you answer the last question in the negative, point out how many and what of your answers, giving the number of the same, contemplate the use of real as distinguished from apparent power, assuming that the parties to the contract contemplated the use of induction motors of ordinary type and not the use of synchronous motors.

Cross-interrogatory No. 25:

Assuming that the direct interrogatories in this action, Nos. 5 to 32, inclusive, call upon you to answer in terms of real instead of apparent power and under ordinary conditions with reference to the use of induction motors, it being assumed that the use of induction motors of the ordinary type was contemplated by the parties, answer each one of the questions in terms of real power under the assumption that the parties contemplated the use of induction motors of the ordinary type.

SHACKLEFORD & BAYLESS,

Z. R. CHENEY,

Attorneys for Plaintiff. [805]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and The Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the P. J. K. lessees.

N. P. WITNESSETH, First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to-wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71 B. The Belvedere Mill-site U. S. Mineral Entry No. 25, lot 72 B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel; thence first course along the meander line of Gastineau Channel at ordinary high water P. J. K. mark N. 52° 00' W. 54 feet to stake No. 2; N. P. thence second course N. 48 15' E. 200 feet to stake No. 3; thence S. 52. 00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one-quarter of an acre more or less, courses expressed from the true meridian, Mag. Var. 29.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three-quarters of a

mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the saw-mill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said saw-mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-five (\$125.00) Dollars per month; payable in gold coin of the United States on

the first day of each month during the term

P. J. K. of said lease at the office of the lessees at

N. P. Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid,

or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor

to re-enter said premises and remove all

P. J. K. persons therefrom, and the lessees do

N. P. hereby covenant, promise and agree to pay the lessor the said rent in the manner

hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

P. J. K. It is the intention of the lessees to erect,

N. P. equip and maintain upon said premises a

water power plant of substantial size and efficiency for the generation of electric power, and if at any times after Two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or

deeds conveying said leased property herein described to the parties of the second P. J. K. N. P. part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their [806]

P. J. K. assigns the property herein leased and accept N. P. in full consideration therefor the right to the use of the three-hundred (300)

electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one-quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf

of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected

to the said premises or either of them, they
P. J. K. shall become the property of the lessor and
N. P. remain covered by this lease and subject to all the terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so that any successor or successors in interest
P. J. K. to the lessor and or to the said land shall
N. P. be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

P. J. K. If neither of the options herein provided
N. P. for are accepted by either the lessor or the lessees then the property and rights herein described with all the improvements that are or that may be hereafter placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant

to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written. Executed in triplicate.

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY,

WALLACE HACKETT,

President.

And HENRY ENDICOTT,

Treasurer.

ALASKA TREADWELL GOLD MINING
COMPANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING
CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary. [807]

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, F. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Co., the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such Corporations executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Treadwell Gold

Mining Co., the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered, that on this 14th day of October, 1909, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a Corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such president and Treasurer; and said Henry Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation, executed the foregoing instrument for and on behalf of said Corporation as the free and voluntary act of said corporation for the uses and purposes therein set forth. Then the said Henry Endi-

cott, being by me first duly sworn on his oath states that he is the Treasurer of said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation, and that the seal hereinbefore affixed in the corporate seal of said Corporation, and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof, I have hereunto set my hand and seal the day and year first above written.

[Seal]

LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913. [808]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY
(a Corporation),

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY (a Corporation), ALASKA UNITED
GOLD MINING COMPANY (a Corpora-
tion), ALASKA MEXICAN GOLD MIN-
ING COMPANY (a Corporation), and
ROBERT A. KINZIE,

Defendants.

Deposition of A. M. Hunt [for Defendants].

BE IT REMEMBERED that pursuant to the stipulation of Counsel for the respective parties in the above-entitled action attached hereto, together

(Deposition of A. M. Hunt.)

with the interrogatories, both direct and cross, also attached hereto, on the 19th day of February, 1913, in the City and County of San Francisco, State of California, before me, P. J. Kennedy, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared A. M. Hunt, a witness produced on behalf of the defendants in the above-entitled action, now pending in said Court, who being by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in said cause, and to whom I propounded said interrogatories, both direct and cross, testified as follows: [809]

Answer to Direct Interrogatory No. 1:

My name is A. M. Hunt. I reside in Berkeley, Cal.

Answer to Direct Interrogatory No. 2:

Consulting Engineer; Electrical, Mechanical and Civil.

Answer to Direct Interrogatory No. 3:

I am a graduate of the U. S. Naval Academy in the Engineering Class of 1879, at which school I received instruction in electricity. I remained in the U. S. Naval Service until 1894, during which period I performed various duties, some of them connected with electrical plants on vessels of the Navy. I resigned from the service in 1894, and since that date have been engaged in the practice of my profession as a Consulting Engineer. My work has been largely electrical, and in connection with hydro-electric developments. I was retained in 1895 by the Los Angeles Railway Co. to reorganize its system. Old

(Deposition of A. M. Hunt.)

cable lines were electrified and power station rebuilt.

I have been connected with the design and installation of hydro-electric plants for the following companies: The Nevada County Electric Power Co., the Yuba Electric Power Co., the British Columbia Electric Railway Co., the Truckee River Electric Co., the American River Electric Co., and others.

In 1899, I installed a large steam-driven electric power plant for the Independent Electric Light & Power Co. for general service in San Francisco, of a capacity of about 8,000 kilowatts, and acted as General Manager of it for four years. I have designed and supervised a number of smaller electric plants, both steam-driven and water power. I have made numerous reports and investigations in electrical matters. [810]

Answer to Direct Interrogatory No. 4:

I am an independent consulting engineer, and for several years have confined my work almost exclusively to office work and investigation and report on various engineering propositions.

Answer to Direct Interrogatory No. 5:

I do.

Answer to Direct Interrogatory No. 6:

A current by the use of which energy at the rate of 300 horse-power can be produced. It is not any current which may be required to produce 300 horse-power no matter what type of apparatus is used to transform the electric current into some other form of energy, but specifically that current which inherently contains electric energy equivalent to 300

(Deposition of A. M. Hunt.)

horse-power, and which can be transformed into an equivalent amount of energy of some other form.

It is a fact that if the current is employed to produce energy in the form of mechanical work by the use of certain types of electric motors, less than an equivalent amount of energy will be produced, but it is also a fact that commercial motors are available, by the use of which the full equivalent of mechanical energy can be produced.

Answer to Direct Interrogatory No. 7:

The watt.

Answer to Direct Interrogatory No. 8:

A watt is the amount of power represented by an electric current when the product of the instantaneous values of pressure and current as expressed in volts and amperes is unity. The terms volts and amperes are the units expressing the pressure [811] and quantity flow in the case of an electric current.

Answer to Direct Interrogatory No. 9:

The product of the amperes by the volts times 1.73, provided that there is no displacement of current and voltage relationship by conditions of the load. If there is such displacement, multiply the above result by the power factor expressed as a decimal.

Answer to Direct Interrogatory No. 10:

746.

Answer to Direct Interrogatory No. 11:

If the expression is to be determinative, some power factor must be understood. I should assume it to be unity or 100 per cent power factor, if not stated. I base this assumption on Rule 74a of the

(Deposition of A. M. Hunt.)

Standardization Rules of the American Institute of Electrical Engineers, approved June 27, 1911, and reading as follows:—

“74a. Power Factor. Since the inherent capacity of alternating current generators, synchronous motors and transformers, depends upon their voltage and their current, they should be rated in kilovolt-amperes. If the apparatus is rated in kilowatts without specification as to the power factor, a power factor of 100 per cent shall be understood.

If rated in kilowatts and a power factor other than 100 per cent be specified, this should be understood as defining only the nature of the load, and not as implying an increase in the ampere rating of the apparatus, which should be based upon the kilowatt rating at 100 per cent power factor,” by which rule I would be guided in my operations.

Prior to the date of approval of the rules from which the above citation is taken, the corresponding rule approved June 21, 1907, read as follows:—

“74a. Power Factor. Alternating current apparatus should be rated in kilowatts, at 100 per cent power-factor, i. e., with current in phase with terminal voltage, unless a phase displacement is inherent in the apparatus or is specified. If a power-factor other than 100 per cent is specified, the rating should be expressed in kilovolt-amperes and power factor, at rated load.”

(Deposition of A. M. Hunt.)

Answer to Direct Interrogatory No. 12:

In accordance with the rule stated in answer to the previous question, I understand the power factor to be 100 per cent.

Answer to Direct Interrogatory No. 13-14:

Neither of these interrogatories can be answered categorically, but both are covered by the following reply:

The power factor of a current supply is a function of the load or apparatus which utilizes the current, and not of that which supplies it. Consequently, the generating apparatus has no part or function in determining the power factor. The generating apparatus has conditions as to power factor imposed on it, over which it has no control. Hence if all matters connected with the manner of use and type of motor and control are left entirely to the party to whom the power is furnished, the party furnishing the current has no way of determining what the current demand will be, except by assuming a power factor, and I should consider that 100 per cent was implied, basing my assumption on Rule 74a, previously reported.

Answer to Direct Interrogatory No. 15:

Under the conditions noted, I would use an ammeter, preferably one producing a continuous visible record.

Answer to Direct Interrogatory No. 16:

Yes.

Answer to Direct Interrogatory No. 17:

A wattmeter would not be the proper device to

(Deposition of A. M. Hunt.)

measure a current corresponding to 300 electric horse-power.

Answer to Direct Interrogatory No. 18:

No. [813]

Answer to Direct Interrogatory No. 19:

It varies.

Answer to Direct Interrogatory No. 20:

Yes.

Answer to Direct Interrogatory No. 21:

Yes.

Answer to Direct Interrogatory No. 22:

Yes.

Answer to Direct Interrogatory No. 23:

Yes, with some types of lamps.

Answer to Direct Interrogatory No. 24:

It is not possible to give a categorical answer to this question.

It does not specify the type nor design of motor, nor whether it is to be started idle or under load. The amount of current which will be required is a function of type and design, the rapidity with which motor must be brought up to speed, the type and design of starting devices, whether the motor is to be started and brought up to speed without load or with load, and if without load whether load is gradually or suddenly applied.

According to the conditions implied, it may require more or less current to start a motor than it does to operate it at load.

Answer to Direct Interrogatory No. 25:

For the same reasons as stated in my reply to No.

(Deposition of A. M. Hunt.)

24, I cannot answer this question.

Answer to Direct Interrogatory No. 26:

For the same reasons as stated in my reply No. 24,
[814] I cannot answer this question.

Answer to Direct Interrogatory No. 27:

If the motor is of such a type and design, and is so started as to require a current of greater than 300 horse-power at starting, and if a time relay circuit-breaker is interposed in the line, which breaker is set to permit the normal flow of a current of 300 horse-power, the breaker will permit the flow of a current of greater than 300 horse-power during the time period for which the breaker is adjusted.

Answer to Direct Interrogatory No. 28:

Yes.

Answer to Direct Interrogatory No. 29:

None that I know of.

Answer to Direct Interrogatory No. 30:

In my opinion, based on my observation and experience, the instantaneous type is in more general use than the time relay type.

Answer to Direct Interrogatory No. 31:

In my opinion, based on my observation and experience, yes.

Answer to Direct Interrogatory No. 32:

I consider it the proper device to use, because during the time period for which a time relay breaker is adjusted to remain closed, the apparatus which it is designed to protect may be subjected to serious and dangerous overloads. A circuit-breaker is also intended to serve another purpose than that of pro-

(Deposition of A. M. Hunt.)

tecting the supply apparatus from injury. Overloads thrown on supply apparatus tend to disorganize and disturb the service [815] rendered to other devices connected to the same source of supply, to such an extent as to be seriously detrimental, and a time relay circuit-breaker will permit such overloads, while an instantaneous circuit-breaker will prevent them.

Answer to Cross-interrogatory No. 1:

No, except that I have been requested by Mr. Bradley to give this deposition.

Answer to Cross-interrogatory No. 2:

I have read the copy of the contract as requested.

Answer to Cross-interrogatory No. 3:

Yes, for smaller sizes.

Answer to Cross-interrogatory No. 4:

In one of the substations of the Pacific Gas & Electric Co., in Oakland, Cal.

Answer to Cross-interrogatory No. 5:

Not necessarily.

Answer to Cross-interrogatory No. 6:

On circuits carrying in addition to induction motors other motors of the synchronous type.

Answer to Cross-interrogatory No. 7:

The question is illy worded, as horse-power is not measured upon an electric current. Assuming that the intent of the question is as to what is the ordinary instrument used for measuring the horse-power being translated in an electric current, where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent

(Deposition of A. M. Hunt.)

[816] power, I answer a wattmeter.

Answer to Cross-interrogatory No. 8:

The accepted definition of "power factor" is that given in the Standardization Rules of the American Institute of Electrical Engineers, approved on June 27, 1911, which reads as follows:—

"The Power Factor in alternating-current circuits or apparatus is the ratio of the effective (i. e., the cyclic average) power in watts to the apparent power in volt-amperes. It may be expressed as follows:

$$\frac{\text{effective power}}{\text{apparent power}} = \frac{\text{effective watts}}{\text{total volt-amperes}} = \frac{\text{effective current}}{\text{total current}} = \frac{\text{effective voltage}}{\text{total voltage}}$$

P.
P. J. K.
N. P.
M. H.

Answer to Cross-interrogatory No. 9:

Under the assumption stated, and with the further assumption that the contract contained no other provision affecting this phase of the situation, I would use a wattmeter to measure the power, but as the readings of the ammeter would vary widely, although the wattmeter showed 300 real horse-power, depending upon the power factor, which is a varying factor, a number of different sittings of the circuit-breaker would fill the requirements stated in the question.

Answer to Cross-interrogatory No. 10:

Not so reasonable as to suppose that it would be used for mixed purposes, including or not including the operation of induction motors.

Answer to Cross-interrogatory No. 11:

There is nothing in my negative reply to No. 10 which implies that I assume that synchronous mo-

(Deposition of A. M. Hunt.)

tors are commonly used in mining operations upon loads of 300 horse-power or less.

I base my negative answer to No. 10 on the following [817] facts. In my past experience, in advising on power contracts between mining companies and electric power companies, I have on several occasions encountered provisions in the contracts which required the company purchasing the power, to so take and utilize it as to maintain a power factor within certain specified limits, approximately 100%. The purchasing party was left free as to the type of motor to be used, and had to adopt his own means of controlling the power factor.

Answer to Cross-interrogatory No. 12:

The question is illy worded, as motors are not used upon a current. Assuming the intent to be that the induction motor is to be connected to the circuit carrying the current mentioned, I would answer as follows:

The benefit and use of 300 horse-power cannot in such case be secured under the conditions named in Direct Interrogatory No. 16, provided the induction motor is the only device connected to the circuit, and that the electric capacity of the circuit is low. It is, however, possible to use devices connected to the circuit which will under the conditions of direct interrogatory No. 16 permit the benefit and use of 300 horse-power to be secured, even when an induction motor is used. Such devices are used and are commercially manufactured and sold, and are known as rotary condensers.

(Deposition of A. M. Hunt.)

Whether the wattmeter would under the conditions indicate 300 horse-power or less would depend on whether the induction motor were used alone upon the circuit or were used in connection with such a power factor correction device as I have spoken of.
Answer to Cross-interrogatory No. 13:

Approximately 80.3 amperes. [818]

Answer to Cross-interrogatory No. 14:

The circuit-breaker should remain as stated if it is the intention at all times to be in readiness to deliver up to 300 horse-power at 70% power factor.

Answer to Cross-interrogatory No. 15:

If the induction motor of the usual types is used the power factor will be lower at fractional loads than at full load.

To the second part of the question, I answer no.

Answer to Cross-interrogatory No. 16:

I mean that they are in use in various parts of the country and for varied uses.

Answer to Cross-interrogatory No. 17:

The specific number of instances within my knowledge of the use of synchronous motors of 300 horse-power or less is very limited, and probably does not exceed twelve. I do not know how many induction motors of corresponding sizes are in use, but is vastly in excess of twelve.

Induction motors are used in smaller sizes because they cost less than synchronous motors and require less attention in operation, and are more easily started.

Answer to Cross-interrogatory No. 18:

My answer to Direct Interrogatory may be con-

(Deposition of A. M. Hunt.)

strued as a negative one, so I answer this question.

A motor requiring 300 horse-power to operate can be started from a plant with sufficient water-power available to generate 300 horse-power, if the motor is of a reasonable type and design, and does not have to be accelerated too rapidly, and under too much load, and if starting devices are of reasonable [819] type and design. Further, if the motor is of a type and design which modifies the power factor of the current supplied, so that it is less than 100%, the water-power plant must be provided with generating and other electrical apparatus of sufficient capacity in excess of a rating of 300 horse-power, as defined in Standardization Rule No. 74a, quoted in my answer to Direct Interrogatory No. 11, to carry the increased electric current imposed on the plant by the modified power factor.

Answer to Cross-interrogatory No. 19:

Assuming the intent of the question to be to state that one horse-power is worth \$87.00 per annum, my answer is:

If by "a thirty second starting surge of 600 horse-power" is meant that starting from any stated horse-power, this is increased instantly by 600 horse-power, which increased load continues for 30 seconds, and then drops instantly to the stated amount, the amount of work performed by the 600 horse-power of energy acting for the thirty seconds is equivalent to approximately .00057 of a horse-power year; .00057 of a horse-power year at \$87.00 per horse-power year is 5.959 cents. However, this is

(Deposition of A. M. Hunt.)

not a measure of the value of such a surge.

The amount of such a surge in relation to capacity of plant may be such as to require an investment in electrical apparatus, greater than the total investment for such apparatus for handling 300 horsepower without such surges.

Answer to Cross-interrogatory No. 20:

The lightening of load and stoppages as assumed in the question would presumably tend to reduce the average rate of power use as much or more than four or five surges per month would increase it, but I should not consider them as compensating one for the other. Such surges do have a very serious [820] effect upon the operation of a generating plant, especially when the ratio of the amount of such surges to the plant capacity is considerable, and the operation of other connected load may be seriously interfered with under such conditions. Such interference may be so serious as to make the remaining power which the plant is capable of producing absolutely unfit for some uses.

Answer to Cross-interrogatory No. 21:

Yes, if motors are started without load and with starting devices designed for this purpose, and load is gradually applied.

Answer to Cross-interrogatory No. 22:

Yes, if power factor corrective devices are used which will adjust power-factor to 100%.

Answer to Cross-interrogatory No. 23:

It is not. My answers are based on neither of the assumptions stated in the question, but upon mak-

(Deposition of A. M. Hunt.)

ing available a current of 300 electric horse-power.

Answer to Cross-interrogatory No. 24.

There is nothing in my negative answer to Cross-interrogatory No. 23 which justifies the implications contained in this question.

My answer to Direct Interrogatory Nos. 13 and 14 points out that power factor of the current supplied is not under the control of the generating apparatus, but is a function of the manner in which the current is used. If used in such a way that the relation between the waves of pressure and rate of flow is displaced, it will require more current to produce 300 mechanical horse-power than if the current is used so as to [821] permit this relation to remain normal. Apparent power is based on this normal relationship, and a reference to Rule 74a, quoted in my answer to Direct Interrogatory No. 11, shows that it is used as the basis for rating the capacity of electric generators.

A current of 300 electric horse-power may have the relation, previously referred to displaced to such an extent by methods of use as to produce mechanical power of very much less than 300 horse-power. Answer to Cross-interrogatory No. 25:

It is not possible for me to read the assumptions given in this question into the Direct Interrogatories, as requested. They have no bearing on some of the questions, and render others contradictory.

A. M. HUNT.

Subscribed and sworn to before me this 20th day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [822]

State of California,

City and County of San Francisco,—ss.

I, P. J. Kennedy, a duly appointed, qualified and acting Notary Public in and for the City and County of San Francisco, State of California, do hereby certify that the witness in the foregoing deposition named, A. M. Hunt, was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that thereupon his foregoing deposition was taken by me in the City and County of San Francisco, State of California, on the 19th day of February, 1913, at the hour of two o'clock P. M. of said day, and thereafter until completed; that I propounded said direct interrogatories and cross-interrogatories to said witness; that said witness answered said interrogatories, both direct and cross, and his answers are fully set forth in the transcript of said deposition attached hereto. I further certify that Estelle Starstrand, a disinterested person, was appointed by me to act as shorthand reporter to take the testimony of said witness in shorthand, and thereafter reduce the same to longhand typewriting, and was by me first duly sworn for that purpose. That said answers of said witness A. M. Hunt to said direct and cross-interrogatories were reduced to longhand typewriting by said Estelle Starstrand, and when completed as herein set forth, were care-

fully read by said witness, and after being corrected by him in every particular desired, were by him subscribed in my presence. That I thereupon wrapped and sealed the said deposition, and directed it to the Clerk of the District Court of the Territory of Alaska, Division No. 1, at Juneau, in which Court said action is pending, in the manner and pursuant to the terms of the stipulation of respective counsel for the respective parties attached hereto.

WITNESS my hand this 20th day of February, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [823]

And the defendants to further maintain the issues on their part offered in evidence the deposition of C. E. Heise, the witness whose testimony was taken by deposition in the City of San Francisco and upon the stipulation attached to said deposition, and who testified on oath as narrated in said deposition, which said deposition of said C. E. Heise so taken was received and read in evidence and the testimony of the said C. E. Heise so given by deposition and received in evidence in this cause is as follows:

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING COM-
PANY, a Corporation, and ROBERT A. KIN-
ZIE,

Defendants.

Stipulation.

It is hereby stipulated that the deposition of C. E. Heise may be taken in response to the hereunto attached interrogatories, both direct and cross, and that such deposition may be taken before P. J. Kennedy, a notary public in and for the State of California, or before Grant H. Smith, a notary public for State of California, or before any other notary public without commission from the court; and when the deposition shall have been so taken it shall be returned by such notary, to the Clerk of the District Court, at Juneau, Alaska, as provided by law, and may be read in evidence on the trial in this case, subject to such objections as might be made if the witness were personally present and testifying orally except that all objections as to the form of the

question are hereby waived. Dated this 30th day of January, 1913.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants. [824]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Interrogatories to be Propounded to C. E. Heise.

Interrogatory No. 1:

State your name, where do you reside?

Interrogatory No. 2:

What is your profession? State your calling.

Interrogatory No. 3:

If you state that you by profession an electrical engineer, you may state fully at what school or schools you were educated as such electrical engineer, and

what experience you have had as an electrical engineer. State in detail.

Interrogatory No. 4:

What is your present occupation and position, what duties do you perform in connection with the position occupied by you?

Interrogatory No. 5:

Do you know what constitutes a current of electricity of not to exceed 300 electric horse-power?

Interrogatory No. 6:

If you answer the preceding question by stating that you do know what constitutes a current of not to exceed 300 electric [825] horse-power, you may state of what such a current consists, stating your views fully and in detail upon this question.

Interrogatory No. 7:

What is the unit of electric power?

Interrogatory No. 8:

If you answer the preceding interrogatory by stating that a watt is the unit of electrical power, you may state what constitutes a watt.

Interrogatory No. 9:

The amperes and voltage of a three phase current being known, how do you determine the number of watts?

Interrogatory No. 10:

How many watts constitute an electric horse-power?

Interrogatory No. 11:

Where a current of not to exceed a given amount of horse-power is spoken of and no mention is made of a power factor, what, if any, power factor is neces-

sarily understood?

Interrogatory No. 12:

In a case where it is sought to make a current of not to exceed 300 horse-power available for the use of another, and nothing is said as to the use of which said power was to be applied, or the type of motors or other apparatus to be installed, or the manner or place of use, what power factor is understood, if any?

Interrogatory No. 13:

Where the place and manner of use is not specified, and the question of what type of motor, the place of use, the manner of installing the motor, and other matters [826] in connection with the operation of the motor, are left entirely in the control of the person to whom the power is furnished, and no particular power factor is mentioned or referred to, is it possible to supply any particular power factor, as the power factor understood by the parties except unity power factor?

Interrogatory No. 14:

If you answer the preceding interrogatory by stating that it is not possible to supply or imply any power factor under the circumstances mentioned, except unity power factor, you may state your reasons why.

Interrogatory No. 15:

Where the current sought to be made available by a power company for the use of another is a current of not to exceed 300 electric horse-power to be taken from and at the generating plant, and no mention is made of a power factor, and neither the type or form of water to be used is specified or referred to, nor

the place of use, the manner in which it is to be installed, how would you proceed to measure such a current, and what apparatus would you employ for that purpose in a case where the voltage is kept constant by means of a Tirril regulator?

Interrogatory No. 16:

Where an automatic instantaneous circuit-breaker is set so as to go out at about 60 amperes on a three phase current with a voltage of 2300 impressed would such apparatus permit the uninterrupted flow [827] of a current of not to exceed 300 horsepower?

Interrogatory No. 17:

Where a current of not to exceed 300 electric horsepower is sought to be made available for the use of another, the current to be taken from and at the generating plant and no mention is made of a power factor, nothing being said concerning the type of motor, or other apparatus to be installed, or about the use to which the power is to be applied, as well as the type of motor used and the place of use, the manner of installing the motor, all being matters left to the control of the party to whom the power is furnished, could such a current be measured by means of a watt meter which automatically takes in consideration the power factor?

Interrogatory No. 18:

You may state whether the power factor of the various types of motors in use *in* the same.

Interrogatory No. 19:

You may state whether the power factor of a motor in use is constant, or whether the same varies depend-

ing upon the condition of the load and other matters in connection with the operations carried on.

Interrogatory No. 20:

Can a synchronous motor be so adjusted and used so as to operate at unity power factor? [828]

Interrogatory No. 21:

Are synchronous motors in general use?

Interrogatory No. 22:

Can 300 electric horse-power be developed by means of a synchronous motor from a three phase current of about 56 amperes with a voltage of 2300 impressed?

Interrogatory No. 23:

At the generating plant will such a current furnish 300 horse-power for lighting purposes?

Interrogatory No. 24:

Can a motor requiring a current of 300 horse-power to operate be started with a current of 300 horse-power?

Interrogatory No. 25:

If you answer the preceding interrogatory by stating that such a motor cannot be started with the same amount of power that it requires to operate it, how much more power approximately does it require to start a simple squirrel cage motor of the induction type than it does to operate such motor?

Interrogatory No. 26:

What is the difference between the starting current and the running current of the various forms of induction motors?

Interrogatory No. 27:

If a time relay circuit-breaker were installed on

the transmission line of a motor requiring 300 horse-power to operate and such motor were operated by a current flowing over such line and the circuit-breaker being set to permit the flow of such current and such motor were brought to a [829] state of rest and were afterwards started and placed in operation would the current drawn at the time such motor was started be of greater horse-power than the current drawn when such motor was in continuous operation, the voltage being kept constant?

Interrogatory No. 28:

Would not a time relay circuit-breaker set so as to permit the flow of a current of 300 horse-power permit the taking of a current of greater horse-power for short periods of time?

Interrogatory No. 29:

Is there any other practical device by which the uninterrupted flow of a current could be limited to any given limit at all times except by means of an instantaneous circuit-breaker?

Interrogatory No. 30:

Where a current sought to be furnished or to be made available is to be a current of not to exceed a given electric horse-power, which, if any form of circuit-breaker is in general use, the instantaneous circuit-breaker or the time relay circuit-breaker?

Interrogatory No. 31:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the form in general use, you may state whether it is the proper appliance to be used for such purpose. [830]

Interrogatory No. 32:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the proper appliance under the facts stated in the two preceding interrogatories, you may state why the use of such instantaneous circuit-breaker is proper.
[831]

*In the District Court for the District of Alaska,
Division No. 1 at Juneau.*

No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Cross-interrogatories to be Propounded to C. L. Corey, W. J. Davis, C. E. Heise, E. A. Quinn, A. M. Hunt and H. C. Parker.

Cross-interrogatory No. 1:

Are you or have you recently been in the employ of F. W. Bradley or any of his associates or of O. Mills or any of the defendant companies?

Cross-interrogatory No. 2:

Attached to these cross-interrogatories you will find a copy of the contract in dispute in this action

and before answering any of the questions, either direct or cross, please read this contract and bear the same in mind in answering the questions addressed to you.

Cross-interrogatory No. 3:

Is it not a fact that induction motors are used upon three-phase alternating currents by power consumers much more than synchronous motors? [832]

Cross-interrogatory No. 4:

Where have you seen a synchronous motor in use upon a three-phase alternating current for a load of not to exceed 300 horse-power?

Cross-interrogatory No. 5:

Is not the power factor less than unity wherever induction motors are used upon a three-phase alternating current?

Cross-interrogatory No. 6:

If you answer the last cross-interrogatory in the negative, state the conditions under which you have observed a unity power factor in connection with the use of an induction motor of 300 horse-power or less.

Cross-interrogatory No. 7:

What is the ordinary device or instrument for measuring horse-power upon an electric current where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent power?

Cross-interrogatory No. 8:

What is the accepted definition of power factor?

Cross-interrogatory No. 9:

Assuming in this case that it was the intention of the parties to deal in real and not apparent power

and that the contract did not require the use of a synchronous motor and that the contract contemplated the use of the power contracted for in mining operations, would you not measure the power by means of a wattmeter and [833] set your circuit-breaker according to the reading of your ammeter and voltmeter at the instant when your wattmeter showed a consumption of 300 real horse-power.

Cross-interrogatory No. 10:

Assuming that it was the intention of the parties to the contract that the 300 horse-power called for therein was to be used in ordinary mining operations, would it not be reasonable to expect that the power would be applied to induction motors?

Cross-interrogatory No. 11:

If you answer the last question in the negative, state what observation and experience you have had with reference to the use of motors in connection with mining which would justify you in assuming that synchronous motors are commonly used in mining operations upon loads of 300 horse-power or less.

Cross-interrogatory No. 12:

If you answer direct interrogatory No. 16 to the effect that the apparatus mentioned in that interrogatory would permit the uninterrupted flow of a current not to exceed 300 horse-power, assume that the motor upon such current is an induction motor of the ordinary type and not a synchronous motor, can the benefit and use of 300 horse-power be secured under the conditions named in interrogatory [834] No. 18, would not a wattmeter indicate under such a setting that less than 300 horse-power was being taken?

Cross-interrogatory No. 13:

If you answer direct interrogatory No. 19 in the affirmative, that is to the effect that the power factor will vary depending upon the condition of the load and other matters in connection with the operations carried on, assume for the purposes of this question that the contract called for the delivery of real and not apparent power, assume that the power factor is 70 instead of unity and that the voltage is 2300 volts, at what amperage would your circuit-breaker be set so as to permit the use of 300 real horse-power?

Cross-interrogatory No. 14:

Having answered the last question and assuming that the power factor is 70 when the full load of 300 horse-power is taken and that the power factor has been determined under normal conditions, if these conditions are maintained and not changed, should the circuit-breaker not remain as stated in answer to your last question?

Cross-interrogatory No. 15:

Assuming the conditions named in the last two cross-interrogatories, is it not a fact that the power [835] factor would decrease if a fractional instead of a full load were used in operating the same machinery? Under such fractional load, however, would you have to change the setting of the circuit-breaker so as to prevent the taking of more than the maximum of real power called for?

Cross-interrogatory No. 16:

If you answer direct interrogatory No. 21 in the affirmative, state what you mean by synchronous motors being in general use.

Cross-interrogatory No. 17:

If you answer direct interrogatory No. 21 in the affirmative, state specifically the number of instances of synchronous motors of 300 horse-power or less within your own knowledge, that are in use and state also the number of induction motors of 300 horse-power or less that are in general use.

Cross-interrogatory No. 18:

If you answer direct interrogatory No. 24 in the negative, state whether a motor requiring 300 horse-power to operate can be started from a plant with sufficient water-power available to generate 300 horse-power.

Cross-interrogatory No. 19:

Assuming horse-power to be worth \$87.00 per annum, what is the value of a thirty second starting surge of 600 horse-power? [836]

Cross-interrogatory No. 20:

Assuming ordinary stoppages at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse-power, would not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from for to five times during a month?

Cross-interrogatory No. 21:

Where the beneficial use of 300 horse-power is contemplated by the parties to a contract and synchronous motors are not contemplated but the ordinary type of induction motor is contemplated and in actual use, is it possible to obtain the uninterrupted and beneficial use of 300 horse-power without taking a

starting surge of more than 300 horse-power?

Cross-interrogatory No. 22:

If the beneficial and uninterrupted use of 300 real horse-power is contemplated by the parties and ordinary types of induction motor are in use as contemplated, can such use be obtained with an instantaneous circuit-breaker set at 56 amperes with a voltage of 2300 volts? [837]

Cross-interrogatory No. 23:

You have answered the direct interrogatories propounded by the defendants in this case. Is it not a fact that all of these answers are based upon the assumption of making available 300 apparent horse-power as distinguished from 300 real horse-power?

Cross-interrogatory No. 24:

If you answer the last question in the negative, point out how many and what of your answers, giving the number of the same, contemplated the use of real as distinguished from apparent power, assuming that the party to the contract contemplated the use of induction motors of the ordinary type and not the use of synchronous motors.

Cross-interrogatory No. 25:

Assuming that the direct interrogatories in this action, Nos. 5 to 32, inclusive, call upon you to answer in terms of real instead of apparent power and under ordinary conditions with reference to the use of induction motors, it being assumed that the use of induction motors of the ordinary type was contemplated by the parties, answer each one of the questions in terms of real power, under the assumption that the parties contemplated the use of induction

motors [838] of the ordinary type.

SHACKELFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff [839]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and The Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold P. J. K. Mining Company and the Alaska United N. P. Gold Mining Company hereinafter called the lessees.

WITNESSETH, First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to-wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71 B. The Belvedere Mill-site U. S. Mineral Entry No. 25, lot 72 B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel; thence first course a long the meander line of Gastineau Channel at ordinary high water mark N. P. J. K. 52° 00' W. 54 feet to stake No. 2; thence N. P. second course N. 48 15' E. 200 feet to stake No. 3; thence S. 52.00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one quarter of an acre more or less,

courses expressed from true meridian, Mag. Var. 29.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the saw-mill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said saw mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-five (\$125.00) Dollars per month; payable in gold coin of the United States on the first day of each

P. J. K. month during the term of said lease at the

N. P. office of the lessees at Treadwell, Alaska;

and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor to re-enter said

P. J. K. premises and remove all persons there-

N. P. from, and the lessees, do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender

said premises in as good state and condition as the same now are.

P. J. K. It is the intention of the lessees to erect,
N. P. equip and maintain upon said premises a water power plant of substantial size and efficiency for the generation of electric power, and if at any time after Two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein de-

P. J. K. scribed to the parties of the second part. If
N. P. prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their [840] assigns

P. J. K. the property herein leased and accept in
N. P. full consideration therefor the right to the use of the three-hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-Five Thousand Dollars (\$25,000.) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the

property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to

the said premises or either of them, they
P. J. K. shall become the property of the lessor and
N. P. remain covered by this lease and subject
to all the terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so

that any successor or successors in interest
P. J. K. to the lessor and or to the said land shall be
N. P. bound by this conveyance in the same manner as if they had executed this agreement;

and the lessees hereof may require at their option that the property herein described *by* conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

P. J. K. If neither of the options herein provided
N. P. for are accepted by either the lessor or the lessees then the property and rights herein described with all the improvements that are or that

may be hereafter placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written. Executed in triplicate.

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY,

WALLACE HACKETT,

President.

And HENRY ENDICOTT,

Treasurer.

ALASKA TREADWELL GOLD MINING
COMPANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING CO.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary. [841]

State of California,

City and County of San Francisco,—ss.

On this 12th day of November, in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Gold Mining Company and Alaska United Gold Mining Co., the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such Corporations executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and

County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Treadwell Gold Mining Co., the Corporation that executed the within and foregoing instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

F. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

Commonwealth of Massachusetts,
County of Suffolk,
City of Boston,—ss.

Be it remembered, that on this 14th day of October, 1909, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a Corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such president and Treasurer; and said Henry Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledge to me that he, Wallace Hackett, as President, and he Henry Endicott, as Treasurer of said Corporation, executed the foregoing instrument for and on behalf

of said Corporation as the free and voluntary act of said corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by me first duly sworn on his oath, states that he is the Treasurer of said corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation, and that the seal hereinbefore affixed is the corporate seal of said Corporation, and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof, I have hereunto set my hand and seal the day and year first above written.

[Seal]

LLOYD A. FROST,

Notary Public.

My commission expires Dec. 5th, 1913. [842]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY (a
Corporation),

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING
COMPANY (a Corporation), ALASKA
UNITED GOLD MINING COMPANY (a
Corporation), ALASKA MEXICAN GOLD
MINING COMPANY (a Corporation), and
ROBERT A. KINZIE,

Defendants.

Deposition of Carl E. Heise [for Defendants].

BE IT REMEMBERED, that pursuant to the stipulation of Counsel for the respective parties in

(Deposition of Carl E. Heise.)

the above-entitled action, attached hereto, together with the interrogatories, both direct and cross, also attached hereto, on the 12th day of March, 1913, in the City and County of San Francisco, State of California, before me, P. J. KENNEDY, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared CARL E. HEISE, a witness produced on behalf of the defendants in the above-entitled action, now pending in said court, who being by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in said cause, and to whom I propounded said interrogatories, both direct and cross, testified as follows: [843]

Answer to Direct Interrogatory No. 1:

My name is Carl E. Heise. My home is in Oakland, Cal.

Answer to Direct Interrogatories Nos. 2 and 3:

By profession, I am an Electrical Engineer. Was educated at Cogswell Polytechnic College and University of California, having been graduated from the University of California in the year 1898.

Was employed about July, 1898, by Westinghouse Electric & Manufacturing Company, being attached to their San Francisco District Office. Acted as repair man, road engineer (locating and correcting troubles), construction engineer (erecting electrical apparatus and putting same into service, having charge of complete power plant installations) and office engineer up to about 1905. Then became connected with the Sales Department, acting as commer-

(Deposition of Carl E. Heise.)

cial engineer and salesman, handling the engineering details of application, also the sale of electrical apparatus.

In October, 1912, was appointed Acting District Manager, and later appointed District Manager for the San Francisco District office of the Westinghouse Electric & Manufacturing Company, which position I now hold. Having been continuously in the employ of Westinghouse Electric & Manufacturing Company since 1898.

Answer to Direct Interrogatory No. 4:

At the present time I am District Manager of the San Francisco District office of Westinghouse Electric & Manufacturing Company. I have charge of matters connected with the operation of that Company's affairs in this territory, exclusive of Treasury Department and Legal Department Affairs. [844]

Answer to Direct Interrogatory No. 5:

Yes.

Answer to Direct Interrogatory No. 6:

A current of electricity of not to exceed 300 electric horse-power, is that exact current which at a given voltage, will develop energy of 300 electric horse-power, or $300 \times 746 = 223,800$ watts. The exact amount of current will depend upon several factors, for example: The voltage; whether direct current or single phase, two phase or three phase alternating current, etc.:

Answer to Direct Interrogatory No. 7:

The watt is the commercial unit of electric power.

Answer to Direct Interrogatory No. 8:

(Deposition of Carl E. Heise.)

A watt is the amount of power produced by an electric current when the product of the instantaneous values of current and voltage are unity. For example, one ampere times one volt equals one watt.

Answer to Direct Interrogatory No. 9:

Provided there is no phase displacement, then, the number of watts equals the product of amperes of current times voltage pressure times 1.732, and can be represented by the formula:

Watts=Amperes x Volts x 1.732.

The factor 1.732 is the square root of 3 and is a constant which applies to the three phase system.

The above is true, provided that the power factor is unity, but for other than unity power factor, it is necessary to multiply the above result by the power factor in order to determine the true watts. [845]

Answer to Direct Interrogatory No. 10:

746 watts.

Answer to Direct Interrogatory No. 11:

Rule No. 74-A of the Standardization Rules of the American Institute of Electrical Engineers, reads as follows:

“74a. Power Factor. Since the inherent capacity of alternating current generators, synchronous motors, and transformers, depends upon their voltage, and their current, they should be rated in kilovolt-amperes. If the apparatus is rated in kilowatts without specification as to the power factor, a power factor of 100 per cent shall be understood.

If rated in kilowatts and a power factor other

(Deposition of Carl E. Heise.)

than 100 per cent be specified, this should be understood as defining only the nature of the load, and not as implying an increase in the ampere rating of the apparatus, which should be based upon the kilowatt rating of 100 per cent power factor."

Consequently, where no specific power factor is stated, it is customary to assume the power factor to be unity or 100 per cent, and this is the custom which I adopt in my business.

Answer to Direct Interrogatory No. 12:

For the reasons explained in my reply to Interrogatory No. 11, I would understand the power factor to be 100 per cent.

Answer to Direct Interrogatories Nos. 13 and 14:

Both of these questions are answered by the following:

The power factor of an alternating current power system is not determined by the characteristics of the generating apparatus, but rather is determined by the characteristics of the apparatus utilizing or converting the current supplied by the generating apparatus. Therefore, if no definite power factor is specified for the load, or the type of motor, etc., is not definitely stated, the power seller would not be able to determine the current demand unless some definite power factor is assumed. Under these conditions, I would assume that Rule No. 74a of the [846] Standardization Rules of the American Institute of Electrical Engineers would apply and that it would be reasonable to assume a power factor of 100 per cent.

(Deposition of Carl E. Heise.)

Answer to Direct Interrogatory No. 15:

I would use a suitable ammeter.

Answer to Direct Interrogatory No. 16:

Assuming unity power factor, if the circuit-breaker is set to open at 60 amperes, it would permit the uninterrupted flow of a current slightly in excess of 300 horse-power.

Answer to Direct Interrogatory No. 17:

A wattmeter would not be the proper instrument to be used to measure a current of 300 electric horse-power, because an ammeter is the proper instrument to be used for measuring current.

Answer to Direct Interrogatory No. 18:

No.

Answer to Direct Interrogatory No. 19:

Varies.

Answer to Direct Interrogatory No. 20:

Yes, approximately.

Answer to Direct Interrogatory No. 21:

Yes.

Answer to Direct Interrogatory No. 22:

Yes.

Answer to Direct Interrogatory No. 23:

Yes, provided proper lamps are used. [847]

Answer to Direct Interrogatory No. 24:

Yes, under certain conditions, but this will depend upon the characteristics of the motor and starting device used, also whether the motor is started with or without its load.

Answer to Direct Interrogatory No. 25:

Answer in the reply to the preceding interrogatory.

(Deposition of Carl E. Heise.)

Answer to Direct Interrogatory No. 26:

In the case of a squirrel cage secondary type of induction motor, to obtain a starting torque equivalent to full load torque, may require a current in the line of four times full load current. Under similar conditions, the phase wound secondary type of induction motor may require one and one-half times full load current.

The exact difference between the starting current and the running current of the various forms of induction motors, will vary somewhat depending on the designs of the various motors.

Answer to Direct Interrogatory No. 27:

Not necessarily. The amount of current drawn from the line when starting such motors, would depend on the type of starting device used, would depend on what percentage of full load torque the motor was called upon to develop in starting, and also would depend on whether or not some auxiliary external starting device was used to assist in starting the motor.

Answer to Direct Interrogatory No. 28:

Yes.

Answer to Direct Interrogatory No. 29:

None that I have knowledge of.

Answer to Direct Interrogatory No. 30:

I believe the instantaneous circuit-breaker is in more [848] general use for the purpose specified.

Answer to Direct Interrogatory No. 31:

Yes.

Answer to Direct Interrogatory No. 32:

(Deposition of Carl E. Heise.)

An instantaneous circuit-breaker is a device intended to immediately open the circuit when the current has reached or exceeded a certain predetermined amount, and is intended to protect against damage, both the utilizing apparatus and the source of supply.

Answer to Cross-interrogatory No. 1:

I have never been in the employ of Mr. F. W. Bradley, and am not now, excepting that I have been requested by him to make this deposition.

Answer to Cross-interrogatory No. 2:

I have read the contract.

Answer to Cross-interrogatory No. 3:

Yes, particularly in the smaller capacities.

Answer to Cross-interrogatory No. 4:

I do not recall that I have ever seen a synchronous motor of such small capacity in commercial use.

Answer to Cross-interrogatory No. 5:

Not necessarily.

Answer to Cross-interrogatory No. 6:

I do not recall having observed a unity power factor in connection with the use of an induction motor of 300 H. P. or less. [849]

Answer to Cross-interrogatory No. 7:

A wattmeter is the device ordinarily used to measure the electrical energy delivered by a circuit.

Answer to Cross-interrogatory No. 8:

As defined in the Standardization Rules of the American Institute of Electrical Engineers, the accepted definition of power factor, which I adopt in practice, is:—

(Deposition of Carl E. Heise.)

“The power factor in alternating current circuits or apparatus is the ratio of the electric power in watts to the apparent power in volts-amperes. It may be expressed as follows:

$$\frac{\text{effective power}}{\text{apparent power}} = \frac{\text{effective watts}}{\text{total volt-amperes}} = \frac{\text{effective current}}{\text{total current}} = \frac{\text{effective voltage}}{\text{total voltage}}$$

Answer to Cross-interrogatory No. 9:

Under the assumptions named, and also assuming that the contract contains no further stipulations covering the matter, I would use a wattmeter to measure the power. However, it might be possible for the power factor to vary over a wide range and the current would therefore also vary and consequently, the conditions contained in the question could be met by several different circuit-breaker settings.

Answer to Cross-interrogatory No. 10:

I would consider it reasonable to expect that the power would be utilized in operating induction motors.

Answer to Cross-interrogatory No. 11:

I answered the last question in the affirmative.

Answer to Cross-interrogatory No. 12:

The answer to this inquiry will depend on what would be the power factor of an induction motor of the ordinary type, as stated in the inquiry. If the power factor was less than [850] approximately 94 per cent, assuming that the circuit-breaker would permit the uninterrupted flow of approximately 60 amperes, then a wattmeter would indicate that less than 300 true horse-power was being consumed.

The above answer is made on the assumption that no auxiliary apparatus was installed to correct for

(Deposition of Carl E. Heise.)

power factor. Of course, the installation of a synchronous condenser to correct for power factor could be made, in which case, neglecting the energy consumed by the synchronous condenser, the wattmeter reading would be correspondingly greater, depending upon the amount of power factor correction.

Answer to Cross-interrogatory No. 13:

Approximately 80 amperes.

Answer to Cross-interrogatory No. 14:

Yes, provided the contract called for delivery of 300 electric horse-power at 70 per cent power factor.

Answer to Cross-interrogatory No. 15:

It is true that the power factor of an induction motor at fractional load, is less than the power factor at full load and it is also true that the current at light load is less than the full load current.

Answer to Cross-interrogatory No. 16:

Synchronous motors are used in various parts of the world and for various purposes.

Answer to Cross-interrogatory No. 17:

It is impossible for me to state accurately the number of synchronous and induction motors respectively, which are in general use, but if the question is intended to get an expression as to relative numbers of each, I would state unquestionably [851] that particularly in the smaller sizes the induction motors predominate. Small synchronous motors are very much more expensive than induction motors of corresponding size and induction motors are more simple and easier to operate.

Answer to Cross-interrogatory No. 18:

(Deposition of Carl E. Heise.)

I answered Direct Interrogatory No. 24 in the affirmative.

Answer to Cross-interrogatory No. 19:

The fact that energy is sold at the rate of \$87.00 per horse-power per annum, does not determine the value of sudden peaks or starting surges in the load. Conditions might be such that in a plant of relatively small capacity and operated at or nearly full load, a sudden starting surge of 600 horse-power, would seriously interfere with the successful operation of the system and possibly greatly interfere with the success of operations dependent upon electric drive from such source of supply.

To take care of the starting surge stated in the question, might therefore mean the necessity for installing increased generating capacity.

Answer to Cross-interrogatory No. 20:

Not necessarily. As pointed out in my reply to No. 19, there are cases where a starting surge might seriously menace the successful operation of the system and this is true particularly if the starting surge or peak is a considerable percentage of the total plant capacity.

Answer to Cross-interrogatory No. 21:

It will depend upon the sizes and types of the various motors installed and also upon the starting conditions which these motors are called on to take care of, for example, whether [852] the motors must develop full load torque or greater or less than full load torque, when starting, and upon what auxiliary or external starting devices are provided.

(Deposition of Carl E. Heise.)

Answer to Cross-interrogatory No. 22:

Yes, if the power factor is corrected to 100 per cent by the use of suitable device or devices for power factor correction, and the amount of current required by such device or devices is not taken into consideration.

Answer to Cross-interrogatory No. 23:

No.

Answer to Cross-interrogatory No. 24:

I consider it impossible to answer this question in exact accordance with its wording, without apparently contradicting some of my answers to the direct interrogatories. In answering the direct interrogatories I have pointed out the necessity for power factor correction, in order to determine the real as distinguished from apparent power.

Answer to Cross-interrogatory No. 25:

In answering the direct interrogatories mentioned in this question, my replies are general in character and not restricted to terms of either real or apparent power.

C. E. HEISE.

Subscribed and sworn to before me this 14th day of March, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of
San Francisco, State of California. [852½]

State of California,

City and County of San Francisco,—ss.

I, P. J. Kennedy, a duly appointed, qualified and acting Notary Public, in and for the City and County

of San Francisco, State of California, do hereby certify that the witness in the foregoing deposition named, Carl E. Heise, was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that thereupon his foregoing depositions was taken by me in the City and County of San Francisco, State of California, on the 12th day of March, 1913, at the hour of two o'clock P. M. of said day, and thereafter until completed; that I propounded said direct interrogatories and cross-interrogatories to said witness; that said witness answered said interrogatories, both direct and cross, and his answers are fully set forth in the transcript of said deposition attached hereto. I further certify that Estelle Starstrand, a disinterested person, was appointed by me to act as shorthand reporter to take the testimony of said witness in shorthand, and thereafter reduce the same to longhand typewriting, and was by me first duly sworn for that purpose. That said answers of said witness to said direct and cross-interrogatories were reduced to longhand typewriting by said Estelle Starstrand, and when completed as herein set forth, were carefully read over by said witness, and after being corrected by him in every particular desired, were by him subscribed in my presence. That I thereupon wrapped and sealed the said deposition, and directed it to the Clerk of the District Court of the Territory of Alaska, Division No. 1, at Juneau, in which Court said action is pending, in the manner and pursuant to the terms of the stipulation of respective counsel for the respective parties attached hereto.

WITNESS my hand this 14th day of March, A. D. 1913.

[Seal]

P. J. KENNEDY,
Notary Public in and for the City and County of
San Francisco, State of California. [853]

And the defendants, to further maintain the issues on their part, offered in evidence the deposition of E. A. Quinan, the witness whose testimony was taken by deposition in the City of San Francisco and upon the stipulation attached to said deposition, and who testified on oath as narrated in said deposition, which said deposition of said E. A. Quinan so taken was received and read in evidence and the testimony of said E. A. Quinan so given by deposition and received in evidence in this cause is as follows: [854]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Stipulation.

It is hereby stipulated that the deposition of E. A.

Quinn may be taken in response to the hereunto attached interrogatories, both direct and cross, and that such deposition may be taken before P. J. Kennedy, a notary public in and for the State of California, or before Grant H. Smith, a notary public in and for State of California, or before any other notary public without commission from the Court; and when the deposition shall have been so taken it shall be returned by such notary, to the Clerk of the District Court, at Juneau, Alaska, as provided by law, and may be read in evidence on the trial in this case, subject to such objections as might be made if the witness were personally present and testifying orally except that all objections as to the form of the question are hereby waived.

Dated this 30th day of January, 1913.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants. [855]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED

GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Interrogatories to be Propounded to E. A. Quinn.

Interrogatory No. 1:

State your name. Where do you reside?

Interrogatory No. 2:

What is your profession? State your calling.

Interrogatory No. 3:

If you state that you are by profession an electrical engineer, you may state fully at what school or schools you were educated as such electrical engineer, and what experience you have had as an electrical engineer. State in detail.

Interrogatory No. 4:

What is your present occupation and position, what duties do you perform in connection with the position occupied by you?

Interrogatory No. 5:

Do you know what constitutes a current of electricity of not to exceed 300 electric horse-power?

Interrogatory No. 6:

If you answer the preceding question by stating that you do know what constitutes a current of not to exceed 300 electric [856] horse-power, you may state of what such a current consists, stating your views fully and in detail upon this question.

Interrogatory No. 7:

What is the unit of electric power?

Interrogatory No. 8:

If you answer the preceding interrogatory by stating that a watt is the unit of electrical power, you may state what constitutes a watt.

Interrogatory No. 9:

The amperes and voltage of a three phase current being known, how do you determine the number of watts?

Interrogatory No. 10:

How many watts constitute an electric horse-power?

Interrogatory No. 11:

Where a current of not to exceed a given amount of horse-power is spoken of and no mention is made of a power factor, what, if any power factor is necessarily understood?

Interrogatory No. 12:

In a case where it is sought to make a current of not to exceed 300 horse-power available for the use of another, and nothing is said as to the use of which said power was to be applied, or the type of motors or other apparatus to be installed, or the manner or place of use, what power factor is understood, if any?

Interrogatory No. 13:

Where the place and manner of use is not specified, and the question of what type of motor, the place of use, the manner of installing the motor, and other matters [857] in connection with the operations of the motor, are left entire in the control of the person to whom the power is furnished, and no partic-

ular power factor is mentioned or referred to, is it possible to supply any particular power factor as the power factor understood by the parties except unity power factor?

Interrogatory No. 14:

If you answer the preceding interrogatory by stating that it is not possible to supply or imply any power factor under the circumstances mentioned, except unity power factor, you may state your reasons why.

Interrogatory No. 15:

Where the current sought to be made available by a power company for the use of another is a current of not to exceed 300 electric horse-power to be taken from and at the generating plant, and no mention is made of a power factor, and neither the type or form of motor to be used is specified or referred to, nor the place of use, the manner in which it is to be installed, how would you proceed to measure such a current, and what apparatus would employ for that purpose in a case where the voltage is kept constant by means of a Tirril regulator?

Interrogatory No. 16:

Where an automatic instantaneous circuit-breaker is set so as to go out at about 60 amperes on a three phase current with a voltage of 2,300 impressed, would such apparatus permit the uninterrupted flow [858] of a current of not to exceed 300 horse-power?

Interrogatory No. 17:

Where a current of not to exceed 300 electric horse-

power is sought to be made available for the use of another, the current to be taken from and at the generating plant and no mention is made of a power factor, nothing being said concerning the type of motor, or other apparatus to be installed, or about the use to which the power is to be applied, as well as the type of motor used, the place of use, the manner of installing the motor, all being matters left to the control of the party to whom the power is furnished, could such a current be measured by means of a wattmeter which automatically takes in consideration the power factor?

Interrogatory No. 18:

You may state whether the power factor of the various types of motors in use is the same.

Interrogatory No. 19:

You may state whether the power factor of a motor in use is constant, or whether the same varies depending upon the conditions of the load and other matters in connection with the operations carried on.

Interrogatory No. 20:

Can a synchronous motor be so adjusted and used so as to operate at unity power factor? [859]

Interrogatory No. 21:

Are synchronous motors in general use?

Interrogatory No. 22:

Can 300 electric horse-power be developed by means of a synchronous motor from a three-phase current of about 56 amperes with a voltage of 2,300 impressed?

Interrogatory No. 23:

At the generating plant will such a current furnish 300 horse-power for lighting purposes?

Interrogatory No. 24:

Can a motor requiring a current of 300 horse-power to operate be started with a current of 300 horse-power?

Interrogatory No. 25:

If you answer the preceding interrogatory by stating that such a motor cannot be started with the same amount of power that it required to operate it, how much more power approximately does it require to start a simple squirrel cage motor of the induction type than it does to operate such motor?

Interrogatory No. 26:

What is the difference between the starting current and the running current of the various forms of induction motors?

Interrogatory No. 27:

If a time relay circuit-breaker were installed on the transmission line of a motor requiring 300 horse-power to operate and such motor were operated by a current flowing over such line and the circuit-breaker being set to permit the flow of such current and such motor were brought [860] to a state of rest and were afterwards started and placed in operation would the current drawn at the time such motor was started be of greater horse-power than the current drawn when such motor was in continuous operation, the voltage being kept constant?

Interrogatory No. 28:

Would not a time relay circuit-breaker set so as to

permit the flow of a current of 300 horse-power permit the taking of a current of greater horse-power for short periods of time?

Interrogatory No. 29:

Is there any other practical device by which the uninterrupted flow of a current could be limited to any given limit at all times except by means of an instantaneous circuit-breaker?

Interrogatory No. 30:

Where a current sought to be furnished or made available is to be a current of not to exceed a given electric horse-power, which, if any form of circuit-breaker is in general use, the instantaneous circuit-breaker or the time relay circuit-breaker?

Interrogatory No. 31:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the form in general use, you may state whether it is the proper appliance to be used for such purpose. [861]

Interrogatory No. 32:

If you answer the preceding interrogatory by stating that the instantaneous circuit-breaker is the proper appliance under the facts stated in the two preceding interrogatories, you may state why the use of such instantaneous circuit-breaker is proper. [862]

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corpora-
tion, MEXICAN GOLD MINING COM-
PANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

**Cross-interrogatories to be Propounded to C. L.
Corey, W. J. Davis, C. E. Heise, E. A. Quinn,
A. M. Hunt and H. C. Parker.**

Cross-interrogatory No. 1:

Are you or have you recently been in the employ
of F. W. Bradley or any of his associates or of O.
Mills or any of the defendant companies?

Cross-interrogatory No. 2:

Attached to these cross-interrogatories you will
find a copy of the contract in dispute in this action
and before answering any of the questions, either di-
rect or cross, please read this contract and bear the
same in mind in answering the questions addressed
to you.

Cross-interrogatory No. 3:

Is it not a fact that induction motors are used upon

three-phase alternating currents by power consumers much more than synchronous motors? [863]

Cross-interrogatory No. 4:

Where have you seen a synchronous motor in use upon a three-phase alternating current for a load of not to exceed 300 horse-power?

Cross-interrogatory No. 5:

Is it not the power factor less than unity wherever induction motors are used upon a three-phase alternating current?

Cross-interrogatory No. 6:

If you answer the last cross-interrogatory in the negative, state the conditions under which you have observed a unity power factor in connection with the use of an induction motor of 300 horse-power or less.

Cross-interrogatory No. 7:

What is the ordinary device or instrument for measuring horse-power upon an electric current where it is the intention of the producer to sell and the consumer to purchase real as distinguished from apparent power?

Cross-interrogatory No. 8:

What is the accepted definition of power factor?

Cross-interrogatory No. 9:

Assuming in this case that it was the intention of the parties to deal in real and not apparent power and that the contract did not require the use of a synchronous motor and that the contract contemplated the use of the power contracted for in mining operations, would you not measure the power by means of a wattmeter and set your circuit-breaker

[864] according to the reading of your ammeter and voltameter at the instant when your wattmeter showed a consumption of 300 real horse-power.

Cross-interrogatory No. 10:

Assuming that it was the intention of the parties to the contract that the 300 horse-power called for therein was to be used in ordinary mining operations, would it not be reasonable to expect that the power would be applied to induction motors?

Cross-interrogatory No. 11:

If you answer the last question in the negative, state what observations and experience you have had with reference to the use of motors in connection with mining which would justify you in assuming that synchronous motors are commonly used in mining operations upon loads of 300 horse-power or less.

Cross-interrogatory No. 12:

If you answer direct interrogatory No. 16 to the effect that the apparatus mentioned in that interrogatory would permit the uninterrupted flow of a current not to exceed 300 horse-power, assume that the motor upon such current is an induction motor of the ordinary type and not a synchronous motor, can the benefit and use of 300 horse-power be secured under the conditions named in interrogatory No. 18, would not a wattmeter [865] indicate under such a setting that less than 300 horse-power was being taken?

Cross-interrogatory No. 13:

If you answer direct interrogatory No. 19 in the affirmative, that is to the effect that the power factor will vary depending upon the condition of the load

and other matters in connection with the operations carried on, assume for the purposes of this question that the contract called for the delivery of real and not apparent power, assume that the power factor is 70 instead of unity and that the voltage is 2300 volts, at what amperage would your circuit-breaker be set so as to permit the use of 300 real horse-power?

Cross-interrogatory No. 14:

Having answered the last question and assuming that the power factor is 70 when the full load of 300 horse-power is taken and that the power factor has been determined under normal conditions, if these conditions are maintained and not changed, should the circuit-breaker not remain as stated in answer to your last question?

Cross-interrogatory No. 15:

Assuming the conditions named in the last two cross-interrogatories, is it not a fact that the power factor would decrease if a fractional instead of a full load were used in operating the same machinery? Under such fractional [866] load, however, would you have to change the setting of the circuit-breaker so as to prevent the taking of more than the maximum of real power called for?

Cross-interrogatory No. 16:

If you answer direct interrogatory No. 21 in the affirmative, state what you mean by synchronous motors being in general use.

Cross-interrogatory No. 17:

If you answer direct interrogatory No. 21 in the affirmative, state specifically the number of instances

of synchronous motors of 300 horse-power or less, within your own knowledge, that are in use and state also the number of induction motors of 300 horse-power or less that are in general use.

Cross-interrogatory No. 18:

If you answer direct interrogatory No. 24 in the negative, state whether a motor requiring 300 horse-power to operate can be started from a plant with sufficient water-power available to generate 300 horse-power.

Cross-interrogatory No. 19:

Assuming horse-power to be worth \$87.00 per annum, what is the value of a thirty second starting surge of 600 horse-power? [867]

Cross-interrogatory No. 20:

Assuming ordinary stoppages at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse-power, would not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from four to five times during a month?

Cross-interrogatory No. 21:

Where the beneficial use of 300 horse-power is contemplated by the parties to a contract and synchronous motors are not contemplated but the ordinary type of induction motor is contemplated and in actual use, is it possible to obtain the uninterrupted and beneficial use of 300 horse-power without taking a starting surge of more than 300 horse-power?

Cross-interrogatory No. 22:

If the beneficial and uninterrupted use of 300 real horse-power is contemplated by the parties and ordinary types of induction motors are in use as contemplated, can such use be obtained with an instantaneous circuit-breaker set at 56 amperes with a voltage of 2300 volts? [868]

Cross-interrogatory No. 23:

You have answered the direct interrogatories propounded by the defendants in this case. It is not a fact that all of these answers are based upon the assumption of making available 300 apparent horse-power as distinguished from 300 real horse power?

Cross-interrogatory No. 24:

If you answer the last question in the negative, point out how many and what of your answers, giving the number of the same, contemplate the use of real as distinguished from apparent power, assuming that the parties to the contract contemplated the use of induction motors of the ordinary type and not the use of synchronous motors.

Cross-interrogatory No. 25:

Assuming that the direct interrogatories in this action, Nos. 5 to 32, inclusive, call upon you to answer in terms of real instead of apparent power and under ordinary conditions with reference to the use of induction motors, it being assumed that the use of induction motors of the ordinary type was contemplated by the parties, answer each one of the questions in terms of real power, under the assumption that the parties contemplated the use of induction

motors of the ordinary type.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Plaintiff. [869]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and The Alaska United Gold Mining Company hereinafter called the lessees.

P. J. K. WITNESSETH, First, the lessor has
N. P. this date and does by these presents lease
unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Belvedere Mill-site U. S. Mineral Entry No. 25, Lot 72B. The Jumbo Mill-site U. S. Mineral Entry No. 60, Lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel; thence first course along the meander line of Gastineau Channel at ordinary high water
P. J. K. mark N. 52 00' W. 54 feet to stake No. 2;
N. P. thence second course No. 48 15' E. 200 feet to stake No. 3; then S. 52.00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. survey No. 260, 200 feet to stake No. 1, the place of beginning

containing an area of one quarter of an acre more or less, courses expressed from the true meridian Mag. Var. 2930'; and also that certain water right known as the Sheep Creek water right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the saw-mill, boarding house, lumber sheds, wharf landing, mill dam flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said saw mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a

monthly rental of one hundred and twenty-

P. J. K. five (\$125.00) dollars per month; payable

N. P. in gold coin of the United States on the first day of each month during the term of

said lease at the office of the lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be

P. J. K. made in any of the covenants herein con-

N. P. tained, that it shall be lawful for the lessor to re-enter said premises and remove all

persons therefrom, and the leasees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of lessor, nor to assign this lease or any part thereof without said written con-

sent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

It is the intention of the lessees to erect,
P. J. K. equip and maintain upon said premises a
N. P. water-power plant of substantial size and
efficiency for the generation of electric
power, and if at any time after two (2) years from
the date hereof the lessor or its assigns shall elect to
take a current of not to exceed three hundred (300)
electric horse-power which shall be taken from and
at the generating plant to be installed upon the leased
premises hereinbefore described, the lessees under-
take, covenant and agree to deliver said current to the
lessor or its assigns upon the execution and delivery
by the lessor or its assigns to the lessee of a deed or
deeds conveying said leased property here-
P. J. K. in described to the parties of the second
N. P. part. If prior to the expiration of nine
years from the date hereof the lessor does
not elect to convey to lessees or their assigns the
property herein [870] leased and accept in full
consideration therefor the right to the use
P. J. K. the three hundred (300) electric horse-
N. P. power hereinbefore mentioned, the lessee
may at their option prior to the expiration
of the ten (10) years provided in this lease purchase
the property herein leased absolutely from the lessor
by paying to the lessor the sum of Twenty-five Thou-
sand Dollars (\$25,000,) in gold coin of the United
States; and the lessor covenants and agrees upon

tender of said sum of Twenty-five Thousand dollars (\$25,000,) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so

P. J. K. perfected to the said premises or either of

N. P. them, they shall become the property of the lessor and remain covered by this lease and subject to all the terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge

P. J. K. thereon, so that any successor or successors

N. P. in interest to the lessor and or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or the lessees
P. J. K. then the property and rights herein de-
N. P. scribed with all the improvements that are
or that may be hereafter placed on the said
premises shall be and become the property of the
lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

Executed in triplicate.

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY.

WALLACE HACKETT,

President.

Treasurer.

____ MINING COMPANY,

President,

Secretary,

ALASKA MEXICAN GOLD MINING CO.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary,

ALASKA UNITED GOLD MINING CO.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary. [871]

State of California,

City and County of San Francisco,—ss.

On this 12th day of November, in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith known to me to be the President and Secretary respectively of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Co., the Corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith known to me to be the president and secretary respectively of Alaska Treadwell Gold Mining Co., the corporation that executed the within and foregoing instrument and to be the officers who executed the said instrument on behalf of said corporation therein named, and they acknowledged to me that such corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal at my office, in the said City and County of San Francisco, the day and year last above written.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered, that on this 14th day of October, 1909, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, treasurer of the Oxford Mining Company, a corporation organized under the laws of the State of Maine, to me known to be the individuals de-

scribed in and who executed the foregoing instrument as such president and Treasurer; and said Henry Endicott having affixed the seal of said corporation to said instrument, they severally acknowledged to me, that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said corporation, executed the foregoing instrument for and on behalf of said corporation as the free and voluntary act of said corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by me first duly sworn, on his oath states that he is the Treasurer of said corporation, is acquainted and is the custodian and has in his possession the corporate seal of said corporation, and that the seal hereinbefore affixed *in* the corporate seal of said corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

[872]

In Witness Whereof, I have hereunto set my hand and seal the day and year first above written.

[Seal]

LLOYD A. FROST,

Notary Public.

My commission expires Dec. 5, 1913. [873]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY (a
Corporation),

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-

PANY (a Corporation), ALASKA UNITED GOLD MINING COMPANY (a Corporation), ALASKA MEXICAN GOLD MINING COMPANY (a Corporation), and ROBERT A. KINZIE,

Defendants.

Deposition of E. A. Quinn [for Defendant].

BE IT REMEMBERED that pursuant to the stipulation of Counsel for the respective parties in the above-entitled action, attached hereto, together with the interrogatories, both direct and cross, also attached hereto, on the 28th day of February, 1913, in the City and County of San Francisco, State of California, before me, P. J. Kennedy, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared E. A. Quinn, a witness produced on behalf of the defendants in the above-entitled action, now pending in said court, who being by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in said cause, and to whom I propounded said interrogatories, both direct and cross, testified as follows: [874]

Answer to Direct Interrogatory No. 1:

E. A. Quinn, San Francisco, Cal.

Answer to Direct Interrogatory No. 2:

Have been following the profession of electrical engineer.

Answer to Direct Interrogatory No. 3:

I was not educated at any school of Electrical Engineering. My experience started when employed by the Chicago-Edison Company in Chicago in 1893 as

(Deposition of E. A. Quinn.)

Meter Inspector. Since 1893, I have continually been engaged in the electrical profession. Have been continually employed successively by the following companies:

Edison Light & Power Company, San Francisco Electric & Water Plant at Santa Clara. Standard Electric Company of California. My experience varies from the operating, construction and sales departments. Westinghouse Electric Manufacturing Company. Nevada California Power Company. Was General Superintendent of the Nevada California Power for three years. I have been sales engineer of electrical apparatus in the San Francisco Office of the Allis Chalmers Company from February, 1910, to the present date.

Answer to Direct Interrogatory No. 4:

My present duties consist of taking care of the electrical business of the Allis-Chalmers Company, handled from the San Francisco District Office. My duties consist of selling, testing and whatever engineering of an electrical nature is connected with same. [875]

Answer to Direct Interrogatory No. 5:

Yes.

Answer to Direct Interrogatory No. 6:

The term "horse-power" has been accepted by Engineering Societies as equivalent to the unit of power. Mechanically it is equal to the lifting of a weight of 33,000 pounds one foot in one minute. A watt is the electrical unit of power. Without going into technical details as to what constitutes a watt, we may say

(Deposition of E. A. Quinn.)

that if a current of amperes flows through a resistance of ohms under a pressure of volts, then volts by amperes equals watts. The total watts divided by 746 watts equals the horse-power. Then 746 watts equal 1 electrical horse-power. A current of 300 electric horse-power would therefore equal 300 times 746 watts.

As a further answer to the question, it is a sufficient quantity of electric current which can develop 300 electric horse-power.

Answer to Direct Interrogatory No. 7:

The watt.

Answer to Direct Interrogatory No. 8:

The current in amperes by the pressure in volts equals the watts. One ampere by one volt equals one watt, there being no lag or lead of either the volt or ampere.

Answer to Direct Interrogatory No. 9:

The number of watts in 3 phase current, no mention being made of power factor, is ascertained by multiplying the amperes by the volts by the square root of 3. This last factor is the constant which indicates the relation of volts, amperes or watts in a 3 Phase circuit. [876]

Answer to Direct Interrogatory No. 10:

746 watts.

Answer to Direct Interrogatory No. 11:

Unity, according to the rules of the American Institute of Electrical Engineers, which I follow in my business. All Generators, unless otherwise specified, are rated by the Manufacturers in kilowatts, they

(Deposition of E. A. Quinn.)

assuming that the power factor is unity.

Answer to Direct Interrogatory No. 12:

Unity.

Answer to Direct Interrogatory No. 13:

It is not possible. Where no power factor is specified, the Manufacturer rates electrical generating apparatus in kilowatts at unity power factor. When in service an electrical generator has no control whatsoever over the power factor, which power factor is governed entirely by the load connected to the generator and by other conditions over which the generator has entirely no control.

Answer to Direct Interrogatory No. 14:

This question has been to some extent answered by the preceding. The variations in an electric load to an electric circuit will instantaneously affect the generator. If the power factor of the connected load is low, the power factor of the generator will be low. Nothing can be done at the generator and to improve or better this power factor.

In contracting for a current of 300 electric horsepower, no mention being made of power factor, the purchasing party clearly implies that it his intention to use 300 times 746 watts. Had he contemplated purchasing electric current at some other than unity power factor and this electric current was furnished him at a lower power factor than unity, he would [877] not be purchasing or be supplied with a current of 300 electric horse-power.

Answer to Direct Interrogatory No. 15:

By graphic ammeters, which register the minimum

(Deposition of E. A. Quinn.)

and maximum current furnished, and all variations between these two points.

Answer to Direct Interrogatory No. 16:

Yes, and slightly in excess thereof.

Answer to Direct Interrogatory No. 17:

No.

Answer to Direct Interrogatory No. 18:

No.

Answer to Direct Interrogatory No. 19:

The power factor of an Induction Motor is affected by various conditions, such as load, line conditions, changes of speed. The power factor of a Synchronous Motor can be maintained at unity.

Answer to Direct Interrogatory No. 20:

Yes.

Answer to Direct Interrogatory No. 21:

Yes.

Answer to Direct Interrogatory No. 22:

Yes.

Answer to Direct Interrogatory No. 23:

Yes. On incandescent lamps. [878]

Answer to Direct Interrogatory No. 24:

Requiring a current of 300 Horse- (E. A. Quinn) power to operate under certain conditions an Induction Motor can be started with a current of 300 electric horse-power. These conditions will depend on the internal characteristics of the motor, the method of starting the motor, whether the motor starts up under load.

Answer to Direct Interrogatory No. 25:

The amount of starting current required to start

(Deposition of E. A. Quinn.)

a simple Squirrel Cage motor will depend altogether on the type of the motor, the brake horse-power developed in starting, and the method adopted for using the horse-power developed on the motor shaft. It is safe to say that a Squirrel Cage motor in starting might require as high as five times full load current, if it was thrown on the circuit without reducing the voltage. A Squirrel Cage Induction Motor of the usual type will require in starting from two or three times full load current. The ordinary type of Squirrel Cage motors could start on less than full load current.

Answer to Direct Interrogatory No. 26:

This question is practically answered by Answer No. 25, adding that the power factor of some types of motors could be much lower in starting than when the motor is operating at full speed.

Answer to Direct Interrogatory No. 27:

Not necessarily so. The amount of current required to start a motor will depend altogether on the type of motor, and the type of starter. An Induction Motor of the horse-power mentioned would under some conditions require more. A synchronous motor might require less. [879]

Answer to Direct Interrogatory No. 28:

Yes.

Answer to Direct Interrogatory No. 29:

Only by means of an instantaneous circuit-breaker.

Answer to Direct Interrogatory No. 30:

The instantaneous circuit-breaker.

Answer to Direct Interrogatory No. 31:

It is the only practical and proper appliance to

(Deposition of E. A. Quinn.)

use under the conditions as explained in Interrogatory No. 30.

Answer to Direct Interrogatory No. 32:

As I understand the issue, "A" agrees to sell to "B" a continuous current of 300 electric horse-power, no more, no less, and "B" expects to receive a continuous current of 300 electric horse-power, no more, no less. If the circuit carrying the 300 electric horse-power was not protected by some device which would operate instantaneously to open the circuit when the current exceeded the agreed current of 300 electric horse-power, "B" would, if only for a few seconds, be receiving more than the agreed upon amount. If the time limiting circuit-breaker were used, "A" would be furnishing and "B" would be receiving, during the period required for the time limiting relay to operate, in excess of the agreed upon amount. This amount depending upon the adjustment of the time limiting feature of the circuit-breaker. The additional functions of an instantaneous circuit-breaker is to protect both the delivery and receiving ends of the circuit. [880]

Answer to Cross-interrogatory No. 1:

Never, with the exception of the purpose of making this deposition.

Answer to Cross-interrogatory No. 2:

I have carefully read copy of the contract attached to the copy of the cross-interrogatories.

Answer to Cross-interrogatory No. 3:

Yes, especially in motors of small horse-power.

(Deposition of E. A. Quinn.)

Answer to Cross-interrogatory No. 4:

I have seen motors of 300 horse-power or less connected to a 3 phase alternating current. I might mention one at the Oneida Mine in Amador County, at the mill of the Combination Mines Company, Goldfield, Nev., at the sub-station of the Standard Electric Company of California, and at the sub-stations of the Pacific Gas & Electric Company.

Answer to Cross-interrogatory No. 5:

Not necessarily so, as if a number of Induction Motors are used, especially together with Synchronous Motors, the power factor can be easily maintained at unity.

Answer to Cross-interrogatory No. 6:

As I understand this question, it relates to the conditions governing the power factor of one motor having a capacity of 300 H.P. The power factor of a 300 H.P. Squirrel Cage type of Induction Motor could not be kept at unity, unless it was used with some power factor correcting device, such as a synchronous motor.

Answer to Cross-interrogatory No. 7:

When it is desired to purchase power, automatically [881] taking care of the power factor, integrating or graphic recording wattmeters are generally used. However, it is usual in contracts for power drawn up between a Power Supply Company and a consumer, where it is the intention to use wattmeters, to measure the power, these wattmeters automatically taking care of the power factor, there is generally a clause inserted in the contract limiting

(Deposition of E. A. Quinn.)

the "peak" of the current. By "peak" is meant the maximum amount of current which may be taken at any one instant, Power Companies insisting upon this clause as a matter of protection to themselves as well as to their customer. It is a well-known fact that motors of low power factor take in starting an abnormal amount of current, and if the supply of current from the generator end is limited, the starting current required is so large that it seriously interferes with the speed and voltage regulation of the generator.

Having complied with the instructions to carefully read the contract before answering any of the questions, I informed myself that the current of 300 electric horse-power mentioned in the contract was being used to operate a 300 H.P. Squirrel Cage Induction Motor, and that this current was supplied by two—1000 K.W. Generators. The starting of a 300 H.P. Squirrel Cage Induction Motor from such a source of current probably interferes with the proper voltage and speed regulation of the generator. This condition naturally would interfere with the speed and voltage regulation of all circuits connected to this generator. Where the surplus current supplied from this machine is furnished to other circuits and used for mining operations this condition might be the cause of considerable expense and inconvenience to all consumers connected to this circuit. [882]

Answer to Cross-interrogatory No. 8:

Power Factor, as an expression, is the medium used to express the difference between true and ap-

(Deposition of E. A. Quinn.)

parent watts, or the ratio of electric power in watts as compared to the apparent power in volt amperes.

Answer to Cross-interrogatory No. 9:

Assuming that it was the predetermined understanding of the litigants in this case that the intention was to purchase and furnish true watts, irrespective of how poor the power factor was, an integrating or graphic recording wattmeter would measure the true watts.

As to setting a circuit-breaker to operate at the instant when the reading of an ammeter and voltmeter indicates 300 times 746 watts as indicated by the voltmeter, this would be a practical impossibility, for the reason that the readings of the voltmeter and ammeter would vary in direct ratio to the variation of the power factor of the apparatus using the electric current, which variation would be caused by changes in load conditions, in line and other conditions.

Answer to Cross-interrogatory No. 10:

To entertain this assumption would require prior knowledge as to what mining operation would be contemplated. Not having this prior knowledge, it is just as reasonable to assume that the current might be used for incandescent lighting, for heating purposes, for reduction purposes, for the operation of Synchronous Motors, for Motor Generators, or for Rotary Converters.

Assuming that prior knowledge was at hand as to the nature of ordinary mining operations in this case, it is more reasonable to assume that a number

(Deposition of E. A. Quinn.)

of small motors would be used, instead of one large motor, and it is more reasonable to assume that the Purchaser wishing to avail himself of the full benefit [883] of the current of 300 electric horse-power, and wishing to install only one motor, would install a motor which would operate at unity power factor.
Answer to Cross-interrogatory No. 11:

I have mentioned the cases I know of where Synchronous Motors of 300 H. P. or less were in use.
Answer to Cross-interrogatory No. 12:

Yes, if the power factor of the Induction Motor is kept at unity. A wattmeter would automatically take care of the power factor and the source of supply would be furnishing in excess of the current of 300 electric horse-power.

Answer to Cross-interrogatory No. 13:

Assuming that the power factor is 70 instead of unity, to permit the flow of a current of 300 electric horse-power, the circuit-breaker would be set at 80.3 amperes.

Answer to Cross-interrogatory No. 14:

Assuming that the power factor remains permanently at 70 and does not change under any conditions, the circuit-breaker should be set at 80.3 amperes. However, in the operation of an ordinary Squirrel Cage type of Induction Motor using a current of 300 electric horse-power having no device for improving the power factor, this permanent condition as to power factor could not exist.

Answer to Cross-interrogatory No. 15:

No.

(Deposition of E. A. Quinn.)

Answer to Cross-interrogatory No. 16:

Synchronous Motors are preferred instead of Induction Motors for connection to circuits by almost all Power Companies. This is especially true of the larger sizes of motors. One [884] Power Company with whom I was connected would not allow an Induction Motor of over 200 H.P. to be connected to their circuits. The reason was that in starting such a motor a disturbance was caused which affected the speed regulation of all other connected motors. The power was almost exclusively used by Mining Companies, and the changes in speed interfered with their milling operations. This condition was especially severe where concentrating or cyanide operations were carried on.

Answer to Cross-interrogatory No. 17:

I have already mentioned the number of Synchronous Motors which have come under my observation. There is no means of ascertaining the number of Induction Motors in general use.

Answer to Cross-interrogatory No. 18:

Yes.

Answer to Cross-interrogatory No. 19:

The value in United States Gold Coin of a 600 H.P. starting surge continuing during a period of 30 seconds is practically insignificant. The value of keeping such a surge off the supply system cannot be measured in dollars and cents. Such a surge under some conditions might cause the suspension of shutting down all mining operations which were receiving their electric power from the source of sup-

(Deposition of E. A. Quinn.)

ply affected by such a surge.

Answer to Cross-interrogatory No. 20:

The three conditions as mentioned would not compensate for the harm done by such a heavy starting surge. Assuming that the source of power is limited and such a surge occurred, and that the source of supply was furnishing electric current to operate electrically driven pumps handling cyanide solutions, the stoppage or interference with the duty of these pumps would possibly cause [885] a very large monetary loss. This is merely an instance where such an interference could cause a serious loss.

If a motor of 300 H.P. requires 600 H.P. to start, it is reasonable to assume that the Supply Company must at all times have available 600 H.P. to start the motor, and if the motor under full load used but 300 H.P. there would necessarily be 300 H.P. standing idle. Assuming that the cost of installing 1 H.P. is \$100.00, this would represent an investment of \$30,000.00, which at 6% per annum would amount to \$1800.00. To this there should be added depreciation on the idle machinery, which under usual engineering practice in a plant of this kind is computed at 7% per annum, which would amount to \$2100.00 for depreciation.

Answer to Cross-interrogatory No. 21:

Yes.

Answer to Cross-interrogatory No. 22:

Yes, by using a power factor correction device such as a Synchronous Motor, Generator, or a Syn-

chronous Converter.

Answer to Cross-interrogatory No. 23:

No.

Answer to Cross-interrogatories Nos. 24 and 25:

In my opinion these questions are so worded that the idea cannot be readily understood. The relationship between true and apparent watts has been explained by previous answers. There is nothing further that I can say in answer to these two questions.

EDWARD A. QUINN.

Subscribed and sworn to before me this 3 day of March, 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [886]

State of California,

City and County of San Francisco,—ss.

I, P. J. Kennedy, a duly appointed, qualified and acting Notary Public in and for the City and County of San Francisco, State of California, do hereby certify that the witness in the foregoing deposition named, E. A. Quinn, was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that thereupon his foregoing deposition was taken by me in the City and County of San Francisco, State of California, on the — day of February, 1913, at the hour of two o'clock P. M. of said day, and thereafter until completed; that I propounded said direct interrogatories and cross-interrogatories to said witness; that said witness answered said interrogatories, both direct and cross,

and his answers are fully set forth in the transcript of said deposition attached hereto. I further certify that Estelle Starstrand, a disinterested person, was appointed by me to act as shorthand reporter to take the testimony of said witness in shorthand, and thereafter reduce the same to longhand typewriting, and was by me first duly sworn for that purpose. That said answers of said witness, E. A. Quinn, to said direct and cross-interrogatories were reduced to longhand typewriting by said Estelle Starstrand, and when completed as herein set forth, were carefully read over by said witness, and after being corrected by him in every particular desired, were by him subscribed in my presence. That I thereupon wrapped and sealed the said deposition, and directed it to the Clerk of the District Court of the Territory of Alaska, Division No. 1, at Juneau, in which Court said action is pending, in the manner and pursuant to the terms of the stipulation of respective counsel for the respective parties attached hereto.

WITNESS my hand this 3rd day of March, A. D. 1913.

[Seal]

P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [887]

Whereupon the cause was submitted to the Court and the Court took the matter under advisement until the 12th day of June, 1913. [888]

[Plaintiff's Exhibit No. "1-A."]

A. G. Co. vs. A. T. G. M. Co. et al. Plffs. Ex.
1A. R. E. R.

Office of
ALASKA TREADWELL GOLD MINING CO.
File No.
Subject.

Main Office:
Mills Building,
San Francisco, Cal.

Treadwell, Alaska, Aug. 10, 1909.

Henry Endicott, Esq.,
101 Tremont Street,
Boston, Mass.

Dear Sir:—

We have been talking to Mr. L. P. Shackleford about your water right on Sheep Creek, this district, and both he and ourselves have agreed upon what we consider an extremely fair proposition. Our conclusions have been drawn up in the shape of a document which Mr. Shackleford will present to you.

As it is now, this Sheep Creek water power is in jeopardy and can be taken at any time by adverse interests. Our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you are holding this water right for the value that it has had and may have in the future for working the Sheep Creek Mines and 30 stamp-mill connected therewith. Estimating conservatively, 150 H.P. is all the power these mines and mill ever required for

their past operations. The mill is amply large enough for the mine and surely 200 H.P. will more than take care of future requirements.

If the proposition is at all acceptable to you we would begin immediate work, thereby preserving your rights and returning you some monthly income. The proposition provides ample time in which you could decide either to sell the property outright or take 200 H.P. for the operation of the mines and mill.

Yours very truly,

F. W. BRADLEY [889]

[Plaintiff's Exhibit No. 1 for Identification.]

A. G. Co. vs. Al. T. Co. et al. Plffs. Ex. 1 for Ident. R. E. R. Recd. R. E. R.

(Copy)

Treadwell, Alaska, August 10, 1909.

Henry Endicott, Esq.,
101 Tremont Street,
Boston, Mass.

Dear Sir:

We have been talking to Mr. L. P. Shackelford about your water right on sheep creek this district and both he and ourselves have agreed upon what we consider an extremely fair proposition, our concession have been drawn up in the shape of a document which Mr. Shackelford will present to you as it is now this sheep creek water power is in jeopardy and can be taken at any time by adverse interests our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you

are holding this water right for the value that it has had and may have in the future for working the sheep creek mines and thirty stamp mill connected therewith estimating conservatively 150 HP is all the power these mines and mills ever required for their past operations. The mill is amply large enough for the mine and surely two hundred H.P. will more than take care of future requirements if the proposition is at all acceptable to you we would begin immediate work, thereby preserving your rights and returning you some monthly income the proposition provides amply time in which you could decide either to sell the property outright or take two hundred H.P. for the operation of the mines and mill, your very truly,

F. W. BRADLEY. [890]

[Plaintiff's Exhibit No. 2 for Identification.]

A. G. Co. vs. A. T. Co. et al. Plffs. Ex. 2 for Ident. R. E. R. Reed. R. E. R.

(Copy)

Boston, August 23, 1909.

F. W. Bradley,

Wardner, Idaho.

Will lease power on terms proposed subject to consent trust company if three hundred horse-power is substituted for two hundred.

HENRY ENDICOTT.

[Plaintiff's Exhibit No. 3 for Identification.]

A. G. Co. vs. A. T. Co. et al. Plffs. Ex. 3 for
Ident. R. E. R. Recd. R. E. R.

(Copy)

Henry Endicott.

You may substitute three hundred for two hundred horse power may I cable Sup't Kinzie to begin immediate protective measure.

F. W. BRADLEY. [891]

[Plaintiff's Exhibit No. "3-A."]

A. G. Co. vs. A. T. G. M. Co et al. Plffs. Ex. 3-A.
R. E. R.

THE WESTERN UNION TELEGRAPH COMPANY.

* * * * *

RECEIVED at 109 State Street, Boston.

Telephone: Main 6821.

(3)

1 Co., CT. .20 Paid 409

Spokane, Washn., Aug. 25-09,

Henry Endicott,

Boston.

You may substitute three hundred for two hundred horse power. May I cable superintendent Kinzie to begin immediate protective measures.

F. N. BRADLEY. 1125a.

MONEY TRANSFERRED BY TELEGRAPH.
ALWAYS OPEN. CABLE OFFICE. [892]

[Plaintiff's Exhibit No. 4 for Identification.]

A. G. Co. vs. A. T. Co., et al. Plffs. Ex. 4 for
Ident. R. E. R. Recd. R. E. R.

UNITED STATES OF AMERICA.

STATE OF NEW YORK.

by

EDWARD LAZANSKY,

Secretary of State and Custodian of the Great Seal
Thereof.

IT IS HEREBY CERTIFIED, That JOSE E. PIDGEON was, on the day of the date of the annexed Certificate and Attestation, Second Deputy Secretary of State of the State of New York, and duly authorized by the laws of said State to make such Attestation and Certificate and to perform the duties belonging to the Secretary of State in making such Attestation and Certificate, in like manner as said Secretary of State; that the said Certificate and Attestation are in due form and executed by the proper officer that the seal affixed to said Certificate and Attestation is the seal of office of the Secretary of State of the State of New York; that the signature thereto of the said Second Deputy Secretary of State is in his own proper handwriting, and is genuine; and that full faith and credit may and ought to be given to his official acts; and, further, that the Secretary of State is the Custodian of the Original Law so certified and attested and Custodian of the Great Seal of said State, hereunto affixed.

(SEAL)

In TESTIMONY WHEREOF, The Great Seal of
the State is hereunto affixed.

WITNESS my hand at the City of Albany, the eighth day of August in the year of our Lord one thousand nine hundred and twelve.

EDWARD LAZANSKY,
Secretary of State. [893]

CHAP. 61.

AN ACT

Relating to stock corporations, constituting chapter fifty-nine of the consolidated laws.

Became a law Feb. 17, 1909, with the approval of the governor. Passed, three-fifths being present.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

CHAPTER 59 OF THE CONSOLIDATED
LAWS.

STOCK CORPORATION LAW.

* * * * *

Article 2. General provisions (§§ 5-18).

* * * * *

ARTICLE 2.

GENERAL PROVISIONS.

* * * * *

Section 15. Merger.

* * * * *

§. 15. MERGER. Any domestic stock corporation and any foreign stock corporation authorized to do business in this state lawfully owning all the stock of any other stock corporation organized for, or engaged in business similar or incidental to that of the possessor corporation may file in the office of the secretary of state, under its common seal, a cer-

tificate of such ownership, and of the resolution of its board of directors to merge such other corporation, and thereupon it shall acquire and become, and be possessed of all the estate, property, rights, privileges and franchises of such other corporation, and they shall vest in and be held and enjoyed by it as fully and entirely and without change or diminution as the same were before held and enjoyed by such other corporation, and be managed [894] and controlled by the board of directors of such possessor corporation, and in its name, but without prejudice to any liabilities of such other corporation or the rights of any creditors thereof. Any bridge corporation may be merged under this section with any railroad corporation which shall have acquired the right by contract to run its cars over the bridge of such bridge corporation.

A—108.

STATE OF NEW YORK,

OFFICE OF THE SECRETARY OF STATE.—ss.

I have compared the preceding copy of Section 15 of the Stock Corporation Law, Chapter 61 of the Laws of 1909 with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said section.

GIVEN under my hand and the Seal of Office of the Secretary of State, at the City of Albany this eighth day of August in the year one thousand nine hundred and twelve.

JOSE E. PIDGEON,

Second Deputy Secretary of State. [895]

[Plaintiff's Exhibit No. 5.]

A. G. Co. vs. A. T. Co. et al. Plffs. Ex. 5. R.
E. R.

UNITED STATES OF AMERICA.

STATE OF NEW YORK.

by

EDWARD LAZANSKY,

Secretary of State and Custodian of the Great Seal
Thereof.

IT IS HEREBY CERTIFIED, That Jose E. Pidgeon was, on the day of the date of the annexed Certificate and Attestation, Second Deputy Secretary of State of the State of New York, and duly authorized by the laws of said State to make such Attestation and Certificate and to perform the duties belonging to the Secretary of State in making such Attestation and Certificate, in like manner as said Secretary of State; that the said Certificate and Attestation are in due form and executed by the proper officer; that the seal affixed to said Certificate and Attestation is the seal of office of the Secretary of State of the State of New York; that the signature thereto of the said Second Deputy Secretary of State is in his own proper handwriting, and is genuine; and that full faith and credit may and ought to be given to his official acts; and, further, that the Secretary of State is the Custodian of the original certificate of Merger so certified and attested and Custodian of the Great Seal of said State, hereunto affixed.

(SEAL)

IN TESTIMONY WHEREOF, The Great Seal

of the State is hereunto affixed. WITNESS my hand at the City of Albany the eighth day of July, in the year of our Lord one thousand nine hundred and twelve.

EDWARD LAZANSKY,
Secretary of State. [896]

CERTIFICATE OF MERGER

by the

ALASKA GASTINEAU MINING COMPANY

For the Merging of the

ALASKA PERSEVERANCE MINING COMPANY.

The Alaska Gastineau Mining Company, pursuant to the provisions of Section 15 of the Stock Corporation Law of the State of New York, hereby certifies, under its common seal, as follows:

FIRST: That the Alaska Gastineau Mining Company is a stock corporation, organized and existing under the laws of the State of New York, and that its certificate of incorporation was duly filed and recorded in the office of the Secretary of State of said State on the 14th day of January, 1911, and that a duplicate of said certificate of incorporation was also filed and recorded in the office of the Clerk of New York County, in said State on the 16th day of January, 1911.

SECOND: That on and prior to January 31, 1911, the Alaska-Perseverance Mining Company was also a stock corporation organized and existing under the laws of the State of New York, and that its certificate of incorporation was duly filed and recorded in the office of the Secretary of State of said State on

or about the 17th day of July, 1901, and in the office of the Clerk of New York County in said State on or about July 18th, 1901.

THIRD: That on said January 31, 1911, the Alaska Gastineau Mining Company lawfully owned all the capital stock of said Alaska-Perseverance Mining Company, and on that day the directors of the said Alaska Gastineau Mining Company, by a resolution duly adopted, determined to and did merge said Alaska-Perseverance Mining Company, which resolution was as follows, to wit: [897]

WHEREAS, the Alaska Gastineau Mining Company was organized for business similar to that of the Alaska-Perseverance Mining Company; and

WHEREAS, the said Alaska Gastineau Mining Company has acquired and now lawfully owns all the stock of said corporation and desires to merge the said Alaska-Perseverance Mining Company, and to be possessed of all the estate, property, rights, privileges and franchises of said corporation;

NOW, THEREFORE, RESOLVED, that the Alaska Gastineau Mining Company merge and it hereby does merge said Alaska-Perseverance Mining Company; and

FURTHER RESOLVED, that the officers of this company be, and they hereby are authorized and directed to make and execute, under the common seal of this company, a certificate of such ownership, and of the adoption of this resolution of the board of directors of this company to merge the said Alaska-Perseverance Mining Company pursuant to statute.

IN WITNESS WHEREOF, the Alaska Gas-

tineau Mining Company has caused this certificate to be signed in its behalf by its president, and its common or corporate seal to be hereunto affixed and attested by its secretary, on the 31st day of January, 1911.

[Corporate Seal]

ALASKA GASTINEAU MINING COM-
PANY,

By W. J. SUTHERLAND,
President.

Attest: B. LIDDLE,
Secretary.

STATE OF NEW YORK,
COUNTY OF NEW YORK,—ss.

On this 31st day of January, 1911, before me personally came WILLIAM J. SUTHERLAND, to me known, who, being duly sworn, did depose and say that he resides in the City of London, England; that he is the President of the Alaska Gastineau Mining Company, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed his name thereto by like order.

[Notarial Seal] HENRY E. GOERLCKE,
Notary Public, New York County. [898]

(Endorsed:)

CERTIFICATE OF MERGER
by the
ALASKA GASTINEAU MINING COMPANY
MERGING THE
ALASKA-PERSEVERANCE MINING COM-
PANY.

Filed and Recorded FEB. 1—1911.

EDWARD LAZANSKY,
Secretary of State.

459A

STATE OF NEW YORK,
Office of the Secretary of State,—ss.

I have compared the preceding with the original Certificate of Merger of Alaska-Perseverance Mining Company with the Alaska Gastineau Mining Company, filed and recorded in this office on the 1st day of February, 1911, and do **HEREBY CERTIFY** the same to be a correct transcript therefrom and of the whole thereof.

(SEAL)

WITNESS my hand and the seal of office of the Secretary of State, at the City of Albany, this eighth day of July, one thousand nine hundred and twelve.

JOSE E. PIDGEON,
Second Deputy Secretary of State. [899]

[Plaintiff's Exhibit No. 6.]

A. G. Co. vs. A. T. G. M. Co., et al. Plffs. Ex. 6.
R. E. R.

(COPY)

San Francisco, Cal., October 31, 1910.

Professor C. L. Cory,
Union Trust Building.
San Francisco.

My dear Professor:

The Alaska Treadwell and allied mining companies have leased a water power property to which they have added other property of their own and have since developed and equipped the whole with a generating plant and are now transmitting 2000 K. W. from this plant to their mines.

The lessor or owner of a portion of the water power property interprets the lease as follows:

“That he has the option to either take 300 electric horse power from and at our generating plant, or else to accept the sum of \$25,000.00 in complete payment for his property.”

The lessor construing the lease in this way, believes that the 300 electric horse power from and at the generating plant is of greater value than the sum of \$25,000.00. Assuming that the lessor has the right to take 300 electric horse power from and at the generating plant subject to all operating and physical conditions beyond our control, I wish your opinion as to the present cash value of the same under the following conditions:

First: The total cost of the above hydro-electric 2000 K. W. plant with electric power delivered at the

mines seven to eight months per year has amounted to \$50. per horse power.

Second: During the seven to eight months each year there is more than sufficient water to run the plant to full capacity. During the remaining four to five months there will not be enough water to make the full 300 electric horse power. That is, for at least four months each year, the plant may not [900] be able to average over 100 electric horse power—this is a physical cause beyond our control.

Third: We have built a 2000 K.W. steam electric relay plant at a capital cost of \$50.00 per horse power. With fuel oil delivered at 90¢ per barrel, we estimate that the total operating cost of this steam relay plant will not exceed \$35.00 per horse power per year.

Fourth: We are developing another water power which we own outright and will provide it with ample storage so as to have an all-the-year-round power. The capital cost of this plant delivering electric power at the mines twelve months per year will be about \$135.00 per horse-power.

Fifth: We will need power in addition to what all the foregoing installations will provide, but can secure it by slightly increasing the capacity of any of the above mentioned plants.

If the lessor is right in his contention that he can demand the 300 electric horse power at the generating plant and sell it to the highest bidder, what price in your opinion would we be justified in offering him for it? You must consider that if this 300 electric horse power is sold to any outsider, the outsider will

have to build his own transmission line four miles to the nearest market, the power will only be good eight months per year and his peak loads cannot exceed 300 electric horse power at the generating plant.

Yours very truly,

F. W. B. [901]

[Defendants' Exhibit "A."]

Alaska Gastineau Mining Co. v. Alaska Treadwell M. Co., et al. Defts. Ex. A. R. E. R.

THIS INDENTURE, made this 22nd day of April
~~January~~, 1911, BETWEEN the Oxford Mining Company, a corporation, hereinafter called the party of the first part, and the Alaska Treadwell Gold Mining Company, a corporation, the Alaska Mexican Gold Mining Company, a corporation, and the Alaska United Gold Mining Company, a corporation, hereinafter called the parties of the second part, WITNESSETH;

THAT WHEREAS, on the 14th day of October, 1909, the parties of the first and second parts above mentioned, entered into an indenture and agreement in words and figures as follows, to wit:

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between OXFORD MINING COMPANY hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

WITNESSETH,—First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Bellvidere Mill-site U. S. Mineral

Entry No. 25, lot 72 B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel, thence first course along the meander line of Gastineau Channel at ordinary high water mark No. 52 00' W. 54 feet to stake No. 2; thence second course N. 48 15' E. 200 feet to stake No. 3; thence S. 52, 00' E. 54 feet to the N.W. side line of Jumbo Mill-site U. S. Survey No. 260 to stake No. 4; thence S. 46 15' W. along the [903] Northwest side line Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one quarter of an acre more or less courses expressed from the true meridian, Mag. Var. 20.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the sawmill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, waterwheels, and all other machinery and appliances used in connection with said sawmill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One hundred and Twenty-five (\$125.00) Dollars per month, payable in gold coin of the United States on the first day of each month during the term of said lease at the

office of the said lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises

the

without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are. [904]

It is the intention of the Lessees to erect, equip and maintain upon said premises a water power plant of substantial size and efficiency for the generation of electric power, and if at any time after Two (2) years from the date hereof the lessors or its assigns shall elect to take a current of *not to exceed three hundred* (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the parties of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their

assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000.) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to [905] do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them they shall become the property of the lessor and remain covered by this lease and subject to all terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so, that any successor or successors in interest to the lessor and or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may re-

quire at their option that the property herein described be conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to ensure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or lessees then the property and right herein described with all the improvements that are or that may hereafter be placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control. [906]

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first above written. (Executed in triplicate.)

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY.

By WALLACE HACKETT,

President.

And HENRY ENDICOTT,

Treasurer.

[Seal Oxford Gold Mining Company.]

ALASKA TREADWELL GOLD MINING
COMPANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING
COMPANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING COM-
PANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

[Seal Alaska Treadwell Gold Mining Co.]

[Seal Alaska Mexican Gold Mining Co.]

[Seal Alaska United Gold Mining Co.]

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered that on this 14th day of October, 1909, before me, the undersigned, a Notary Public, in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a corporation, organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing *going* instrument

as such President and Treasurer; and said Henry [907] Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation executed the foregoing instrument for and on behalf of said Corporation, as the free and voluntary act of said Corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by me first duly sworn, on his oath states that he is the Treasurer of Said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation and that the seal hereinbefore affixed is the corporate seal of said Corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof, I have hereunto set my hand and seal the date and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November, in the year one thousand nine hundred and nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith, known to me to be the President and Secretary respectively, of Alaska Mexican Gold Min-

ing Company and Alaska United Gold Mining Company, the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same. [908]

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of San Francisco, State of California.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November, in the year One Thousand nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith, known to me to be the President and Secretary, respectively, of Alaska Treadwell Gold Mining Company, the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledge to me, that such Corporation executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in said City and County of San Francisco, the day and

year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [909]

**CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA TREADWELL GOLD MINING
COMPANY.**

“Resolved, that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Treadwell Gold Mining Company; that the foregoing Resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded in the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand

1002 *Alaska Treadwell Gold Mining Co. et al.*

as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Treadwell Gold Mining Com-
pany.

CERTIFIED COPY OF RESOLUTION PASSED
BY THE [910] BOARD OF DIRECTORS
OF ALASKA MEXICAN GOLD MINING
COMPANY.

“Resolved that the proposed lease dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be, and the same is hereby approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Mexican Gold Mining Company; that the foregoing Resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Mexican Gold Mining Company.

**CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA UNITED GOLD MINING COM-
PANY.**

“Resolved that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, [911] Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby approved and accepted and the President and Secretary are hereby authorized and directed, in the name of the company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska United Gold Mining Company; that the foregoing Resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the

meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska United Gold Mining Company.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

WHEREAS the International Trust Company, a corporation, has reserved unto itself for the benefit of itself and various persons therein interested a lien upon the property described in the foregoing lease for the sum of \$36,375 to secure the costs, advances, and charges in connection with the foreclosure of certain trust deeds upon certain property in the District of Alaska, a part of which is described in the [912] foregoing instrument.

NOW, THEREFORE, THIS INSTRUMENT WITNESSETH That in consideration of the covenants contained in the foregoing agreement said International Trust Company for the purpose of binding the interest so held upon said property by said lien, assents, agrees and ratifies the execution of the foregoing lease with the Alaska-Treadwell Gold Mining Company et al., Party of the Second Part, and agrees to substitute said lien upon any contract or contracts which may be made pursuant to the options contained in the said lease, so that the terms

and provisions of said contract may be carried out.

Executed in triplicate.

Signed this 14th day of October, 1909.

INTERNATIONAL TRUST COMPANY.

By JNO. M. GRAHAM, Pres.,

HENRY L. JEWETT, Sect.

[Corporate Seal]

Witnesses:

WALTER W. BLACK.

HAROLD LAWRENCE.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered that on the 14th day of October, 1909, before me, the undersigned Notary Public, in and for said county and State, personally appeared John M. Graham, President, and Henry L. Jewett, Secretary of the International Trust Company, a corporation organized under the laws of the state of Massachusetts, to me known to be the individuals described in and who executed the foregoing instrument, as such President and Secretary for and on behalf of said International Trust Company as Trustee for the mortgage bondholders under said instrument described; the said Henry L. Jewett having affixed the seal of said corporation to said instrument and they severally acknowledged to me that he, John M. Graham as president, [913] and he, the said Henry L. Jewett, as Secretary of said Corporation, executed the foregoing instrument for and on behalf of said corporation as the free and voluntary act and deed of said corporation as Trustee for

the uses and purposes therein set forth.

Then the said Henry L. Jewett being by me first duly sworn on his oath states that he is the Secretary of said Corporation, is acquainted, is the custodian, and has in his possession the corporate seal of said corporation and that the seal hereinbefore affixed is the corporate seal of said corporation and was affixed by him as such Secretary by order of the Board of Directors of said Corporation.

IN WITNESS WHEREOF I have hereunto set my hand and official seal the day and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913."

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

WHEREAS the International Trust Company, a corporation, has reserved a lien upon the property described in the foregoing lease together with other property.

Now for the purpose of further securing said lien, the undersigned lessor in the foregoing instrument, by order of its Board of Directors, hereby assigns the rentals due or to become due under the foregoing lease to the International Trust Company to be applied, first upon the payment of interest on the \$15,000 item of compensation reserved in favor of said Trust Company at the rate of six per cent (6%) per annum—and second that the balance of said

moneys be applied [914] pro rata upon the other items described in said lien so reserved.

Dated this 14th day of October, 1909, at Boston, Mass.

(Signed) OXFORD MINING COMPANY.

By WALLACE HACKETT,

President.

Attest: HENRY ENDICOTT,

Secretary.

(This true copy of the foregoing lease was made December 12th, 1910, by W. S. Bayless.)

—which said agreement was duly filed for record at 1 o'clock P. M. on the 17th day of October, 1910, and duly recorded in Book 19 Miscellaneous, at page 2 of the records of the Juneau Recording District, wherein the property mentioned in said indenture and agreement is situated;

AND WHEREAS, on or about the 17th day of October, 1910, the parties of the second part had finished the erection and equipment upon the premises described in the said indenture and agreement of a water power plant of substantial size and efficiency pursuant to the provisions of said indenture and agreement and had expended in the erection and equipment of said water power plant a sum in excess of One Hundred Thousand (\$100,000) Dollars;

AND WHEREAS, the said water power plant was completed about one year sooner than contemplated in the said indenture and agreement of October 14, 1909, which allowed a period of two years from the date of said agreement for the erection of the said water power plant;

AND WHEREAS, thereafter on the 31st day of October, 1909, the Oxford Mining Company, party of the first part herein, [915] duly elected to take the electric current provided for in the said indenture and agreement, which said election was accepted and agreed to by the parties of the second part hereinbefore mentioned on the said 31st day of October, 1910;

NOW, THEREFORE, under and pursuant to the provisions of the indenture and agreement of October 14, 1909, and the election of the party of the first part of October 31, 1910, the party of the first part, for and in consideration of the provisions of the said indenture and agreement of October 14, 1909, and pursuant to its election of October 31st, 1910; and in further consideration of the sum of One Hundred Thousand (\$100,000) Dollars expended in the erection and equipment of a water power plant of sufficient size and efficiency for the generation of electric power by the parties of the second part hereto, receipt of all of which considerations as above set forth is hereby acknowledged by the party of the first part, does by these presents grant, bargain and sell unto the parties of the second part, and to their heirs, assigns and successors in interest, forever, all of that certain property described in the said indenture and agreement of October 14, 1909, hereinbefore set forth, lying and being situate on and near Sheep Creek in the Harris Mining District, District of Alaska.

TOGETHER with all the tenements, hereditaments and appurtenances thereunto belonging or ap-

pertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, it being the intention of this instrument in conveying to comply in full with the undertaking on the part of the Oxford Mining Company made on the 14th day of October, 1909.

TO HAVE AND TO HOLD said premises together with the [916] appurtenances unto the said parties of the second part and to their heirs, assigns and successors in interest forever.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

OXFORD MINING COMPANY,

By WALLACE HACKETT,

President.

HENRY ENDICOTT,

Treasurer.

[Corporate Seal—Oxford Mining Company, Incorporated 1909, Maine.]

Signed, sealed and delivered in the presence of

LEWIS P. SHACKLEFORD.

L. W. LAWRENCE.

COMMONWEALTH OF MASSACHUSETTS,

COUNTY OF SUFFOLK,

CITY OF BOSTON,—ss.

It will be remembered that on the twenty-second day of April, 1911, before me, Alexander L. Pelkey, Notary Public in and for said State, County and City, personally appeared WALLACE HACKETT, president, and HENRY ENDICOTT, treasurer of

the Oxford Mining Company, a corporation organized under the laws of the State of Maine, known to me to be the individuals described in and who executed the foregoing instrument as said President and Treasurer, and the said HENRY ENDICOTT, having affixed the seal of said corporation to said instrument, they severally acknowledged to me that WALLACE HACKETT as President and HENRY ENDICOTT as Treasurer of the said corporation executed the foregoing instrument for and on behalf of said corporation to be the free and voluntary act of said corporation for the uses and purposes therein set forth. Then said HENRY ENDICOTT, being first duly sworn, on his oath states that he is the Treasurer of said corporation and he is acquainted with, is custodian of and has in his possession the corporate seal of said corporation, and that the seal herein [917] before affixed is the seal of said corporation and was affixed by him as said Treasurer by order of the Board of Directors of said corporation.

IN WITNESS WHEREOF I have herein set my hand and official seal the day and year first above written.

[Notarial Seal] ALEXANDER L. PELKEY,
Notary Public.

(Indorsed:) Deed. Oxford Mining Company to Alaska Treadwell Gold Mining Co., Alaska Mexican Gold Mining Co., Alaska United Gold Mining Co. Dated April 22nd, 1911. District of Alaska, Juneau,—ss. The within instrument was filed for record at 2.20 o'clock P. M., May 9, 1911, and duly re-

corded in book 22, Deeds, on page 546, of the records of said District. G. C. Winn, District Recorder.

(NOTE—By order of Court March 1, 1913, on introduction the foregoing paper as Defendants' Exhibit "A," it was ordered that the reporter should substitute in lieu of original deed a copy to be made by him, and return the original to the defendants. I hereby certify that the above and foregoing and hereto attached ——— pages constitute a full, true and correct copy of the original deed, of which they purport to be a copy, and that they have been compared by me with the original as the same was introduced in evidence.

R. E. ROBERTSON,
Official Reporter.) [918]

BE IT FURTHER REMEMBERED that prior to the filing of the answer herein, the defendants filed their demurrer, which demurrer was overruled by the Court, to which ruling and order of the Court, defendants then and there excepted, which exception was then and there allowed by the Court. [919]

[Findings Requested by Defendants, etc.]

Thereupon the defendants requested the Court to make the following findings of fact: Finding of Fact No. II as requested by the defendants, which is in words and figures as follows, to wit:

FINDING OF FACT No. II.

The Court finds that certain and other and further negotiations were had between the Oxford Mining Company on the one hand, and the defendant companies on the other, which led to the execution be-

tween the parties of the following contract, which is in writing and is as follows: [920]

THIS INDENTURE, made this 22d day of April, 1911, BETWEEN the Oxford Mining Company, a corporation, hereinafter called the party of the first part, and the Alaska Treadwell Gold Mining Company, a corporation, the Alaska Mexican Gold Mining Company, a corporation, and the Alaska United Gold Mining company, a Corporation, hereinafter called the parties of the second part, WITNESSETH;

THAT WHEREAS, on the 14th day of October, 1909, the parties of the first and second parts above mentioned, entered into an indenture and agreement in words and figures as follows, to wit:

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between OXFORD MINING COMPANY hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

WITNESSETH,—First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Bellvidere Mill-site U. S. Mineral Entry No. 25, lot 72B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical

with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel, thence first course along the meander line of Gastineau Channel at ordinary high water mark No. 52 00' W. 54 feet to stake No. 2; thence second course N. 48 15' E. 200 feet to stake No. 4; thence S. 52 [921] 00' E. 54 feet to the N.W. side line of Jumbo Mill-site U. S. Survey No. 260 to stake No. 4; thence S. 46 15' W. along the Northwest side line Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one quarter of an acre more or less courses expressed from the true meridian, Mag. Var. 29.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the sawmill, boarding-house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said sawmill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One hundred and Twenty-five (\$125.00) Dollars per month, payable in gold coin of the United States on the first day of each month during the term of said lease at the office of the said lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained,

that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without the written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are. [922]

It is the intention of the Lessees to erect, equip and maintain upon said premises a water-power plant of substantial size and efficiency for the generation of electric power, and if at any time after Two (2) years from the date hereof the lessors or its assigns shall elect to take a current of *not to exceed three hundred* (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the parties of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10)

years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to [923] do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them they shall become the property of the lessor and remain covered by this lease and subject to all terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so, that any successor or successors in interest to the lessor and or lessees who may acquire any interest in and to the title to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow

so as to ensure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or lessees then the property and rights herein described with all the improvements that are or that may hereafter be placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control. [924]

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals, the day and year first above written. (Executed in triplicate.)

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY,

By WALLACE HACKETT,

President.

And HENRY ENDICOTT,

Treasurer.

[Seal Oxford Mining Company.]

vs. Alaska Gastineau Mining Company. 1017

ALASKA TREADWELL GOLD MINING
COMPANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING
COMPANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING COM-
PANY,

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

[Seal Alaska Treadwell Gold Mining Co.]

[Seal Alaska Mexican Gold Mining Co.]

[Seal Alaska United Gold Mining Co.]

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered that on this 14th day of October, 1909, before me, the undersigned, a Notary Public, in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such

President and Treasurer; and said Henry [925] Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me, that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation executed the foregoing instrument for and on behalf of said Corporation, as the free and voluntary act of said Corporation for the uses and purposes therein set forth. Then the said Henry Endicott, being by me first duly sworn, on his oath states that he is the Treasurer of Said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation and that the seal hereinbefore affixed is the corporate seal of said Corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof I have hereunto set my hand and seal the date and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,
Notary Public.

My commission expires, Dec. 5th, 1913.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November in the year one thousand nine hundred and nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary respectively, of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Com-

pany, the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same. [926]

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of
San Francisco, State of California.

STATE OF CALIFORNIA,

CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November in the year One Thousand nine hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary, respectively, of Alaska Treadwell Gold Mining Company, the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in said City and County of San Francisco, the day and

year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public, in and for the City and County of
San Francisco, State of California. [927]

CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA TREADWELL GOLD MINING
COMPANY.

“Resolved that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I. F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Treadwell Gold Mining Company; that the foregoing resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof, I have hereunto set my hand

as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Treadwell Gold Mining Com-
pany. [928]

**CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA MEXICAN GOLD MINING COM-
PANY.**

“Resolved that the proposed lease dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be, and the same is hereby approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Mexican Gold Mining Company; that the foregoing resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the meeting

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of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal.]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Mexican Gold Mining Com-
pany.

CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA UNITED GOLD MINING COM-
PANY.

“Resolved that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, [929] Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby approved and accepted and the President and Secretary are hereby authorized and directed, in the name of the company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska United Gold Mining Company; that the foregoing Resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company

at a meeting held on the 11th day of November, 1909, as the same is now, recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska United Gold Mining Company.

Commonwealth of Massachusetts,
County of Suffolk,
City of Boston,—ss.

WHEREAS the International Trust Company, a corporation, has reserved unto itself for the benefit of itself and various persons therein interested a lien upon the property described in the foregoing lease for the sum of \$36,376, to secure the costs, advances, and charges in connection with the foreclosure of certain trust deeds upon certain property in the District of Alaska, a part of which is described in the [930] foregoing instrument.

NOW, THEREFORE, THIS INSTRUMENT WITNESSETH that in consideration of the covenants contained in the foregoing agreement said International Trust Company for the purpose of binding the interest so held upon said property by said lien, assents, agrees and ratifies the execution of the foregoing lease with the Alaska-Treadwell Gold Mining Company et al., Party of the Second Part, and agrees to substitute said lien upon any contract or contracts which may be made pursuant to the

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options contained in the said lease, so that the terms and provisions of said contract may be carried out.

Executed in triplicate.

Signed this 14th day of October, 1909.

INTERNATIONAL TRUST COMPANY.

By JNO. M. GRAHAM,

Pres.,

[Corporate Seal]

HENRY L. JEWETT,

Sect.

Witnesses:

WALTER W. BLACK.

HAROLD LAWRENCE.

Commonwealth of Massachusetts,

County of Suffolk,

City of Boston,—ss.

Be it remembered that on the 14th day of October, 1909, before me, the undersigned Notary Public, in and for said county and State, personally appeared John M. Graham, ~~President~~, and Henry L. Jewett, Secretary of the International Trust Company, a corporation organized under the laws of the State of Massachusetts, to me known to be the individuals described in and who executed the foregoing instrument, as such President and Secretary for and on behalf of said International Trust Company as Trustee for the mortgage bondholders under said instrument described; the said Henry L. Jewett having affixed the seal of said corporation to said instrument and they severally acknowledged to me that he, John M. Graham as president, [931] and he, the said Henry L. Jewett, as Secretary of said corporation,

executed the foregoing instrument for and on behalf of said corporation as the free and voluntary act and deed of said corporation as Trustee for the uses and purposes therein set forth.

Then the said Henry L. Jewett, being by me first duly sworn on his oath states that he is the Secretary of said corporation, is acquainted, is the custodian, and has in his possession the corporate seal of said corporation and that the seal hereinbefore affixed is the corporate seal of said corporation and was affixed by him as such Secretary by order of the Board of Directors of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and official seal the day and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913."

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

WHEREAS, the International Trust Company, a corporation, has reserved a lien upon the property described in the foregoing lease together with other property.

Now for the purpose of further securing said lien, the undersigned lessor in the foregoing instrument, by order of its Board of Directors, hereby assigns the rentals due or to become due under the foregoing lease to the International Trust Company to be ap-

plied, first upon the payment of interest on the \$15,000, item of compensation reserved in favor of said Trust Company at the rate of six per cent (6%) per annum,—and second that the balance of said moneys be applied [932] pro rata upon the other items described in said lien so reserved.

Dated this 14th day of October, 1909, at Boston, Mass.

(Signed) OXFORD MINING COMPANY,
By WALLACE HACKETT,
President.
Attest: HENRY ENDICOTT,
Secretary.

—which said agreement was duly filed for record at 1 o'clock P. M. on the 17th day of October, 1910, and duly recorded in Book 19 Miscellaneous, at page 2 of the records of the Juneau Recording District, wherein the property mentioned in said indenture and agreement is situated;

AND WHEREAS, on or about the 17th day of October, 1910, the parties of the second part had finished the erection and equipment upon the premises described in the said indenture and agreement of a water-power plant of substantial size and efficiency pursuant to the provisions of said indenture and agreement and had expended in the erection and equipment of said water-power plant a sum in excess of One Hundred Thousand (\$100,000) Dollars;

AND WHEREAS, the said water-power plant was completed about one year sooner than contemplated in the said indenture and agreement of October 14, 1909, which allowed a period of two years from the

date of said agreement for the erection of the said water-power plant;

AND WHEREAS, thereafter on the 31st day of October, 1909, the Oxford Mining Company, party of the first part herein, [933] duly elected to take the electric current provided for in the said indenture and agreement, which said election was accepted and agreed to by the parties of the second part hereinbefore mentioned on the said 31st day of October, 1910;

NOW, THEREFORE, under and pursuant to the provisions of the indenture and agreement of October 14, 1909, and the election of the party of the first part of October 31, 1910, the party of the first part, for and in consideration of the provisions of the said indenture and agreement of October 14, 1909, and pursuant to its election of October 31st, 1910; and in further consideration of the sum of One Hundred Thousand (\$100,000) Dollars expended in the erection and equipment of a water-power plant of sufficient size and efficiency for the generation of electric power by the parties of the second part hereto, receipt of all of which considerations as above set forth is hereby acknowledged by the party of the first part, does by these presents grant, bargain and sell unto the parties of the second part, and to their heirs, assigns and successors in interest, forever, all of that certain property described in the said indenture and agreement of October 14, 1909, hereinbefore set forth, lying and being situate on and near Sheep Creek in the Harris Mining District, District of Alaska.

TOGETHER with all the tenements, hereditaments and appurtenances thereunto belonging or ap-

pertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, it being the intention of this instrument in conveying to comply in full with the undertaking on the part of the Oxford Mining Company made on the 14th day of October, 1909.

TO HAVE AND TO HOLD SAID premises together with the [934] appurtenances unto the said parties of the second part and to their heirs, assigns and successors in interest forever.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

OXFORD MINING COMPANY.

By WALLACE HACKETT,

President.

HENRY ENDICOTT,

Treasurer.

[Corporate Seal—Oxford Mining Company, Incorporated 1909, Maine.]

Signed, sealed and delivered in the presence of

LEWIS P. SHACKLEFORD,

L. W. LAWRENCE.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

It will be remembered that on the twenty-second day of April, 1911, before me, Alexander L. Pelkey, Notary Public in and for said State, County and City, personally appeared WALLACE HACKETT, president, and HENRY ENDICOTT, treasurer of

the Oxford Mining Company, a corporation organized under the laws of the State of Maine, known to me to be the individuals described in and who executed the foregoing instrument as said President and Treasurer, and the said HENRY ENDICOTT, having affixed the seal of said corporation to said instrument, they severally acknowledged to me that WALLACE HACKETT as President and HENRY ENDICOTT as Treasurer of the said corporation executed the foregoing instrument for and on behalf of said corporation to be the free and voluntary act of said corporation for the uses and purposes therein set forth. Then said HENRY ENDICOTT, being first duly sworn, on his oath states that he is the Treasurer of said corporation and he is acquainted with, is custodian of and has in his possession the corporate seal of said corporation, and that the seal hereinbefore [935] affixed is the seal of said corporation and was affixed by him as said Treasurer by order of the Board of Directors of said corporation.

IN WITNESS WHEREOF I have herein set my hand and official seal the day and year first above written.

[Notarial Seal] ALEXANDER L. PELKEY,
Notary Public.

Above finding is this 12th day of June, 1913, made by the Court.

PETER D. OVERFIELD,
Judge. [936]

Which said Finding No. II was thereupon made and adopted by the Court as a Finding of the Court and the signature of the Judge appended thereto on

the 12th day of June, 1913, by Peter D. Overfield.
[937]

Thereupon the defendants requested the Court to make Finding No. III as requested by the defendants, which is in words and figures as follows:

FINDING OF FACT No. III.

The Court further finds that certain negotiations were had between the Oxford Mining Company on the one hand, and the defendant companies on the other, which led to the execution of the following contract, which is in writing and reads as follows:
[938]

THIS AGREEMENT, made this 22nd day of April, 1911, BETWEEN the Oxford Mining Company, a corporation, the party of the first part, and the Alaska Treadwell Gold Mining Company, a corporation, the Alaska Mexican Gold Mining Company, a corporation, and the Alaska United Gold Mining Company, a corporation, parties of the second part, WITNESSETH:

THAT WHEREAS, on the 14th day of October, 1909, the parties hereto, entered into an indenture and agreement in words and figures as follows, towit:

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between OXFORD MINING COMPANY hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

WITNESSETH,—First, the lessor has this date and does by these presents lease unto the lessees all

of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, towit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Bellvidere Mill-site U. S. Mineral Entry No. 25, Lot 72B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel, thence first course along the meander line of Gastineau Channel at ordinary high water mark N. 52 00' W. 54 feet to stake No. 2; thence second course N. 48 15' N. 200 feet to stake No. 3; thence S. 52. [939] 00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260 to stake No. 4; thence S. 46 15' W. along the Northwest side line Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one quarter of an acre more or less courses expressed from the true meridian, Mag. Var. 29.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the sawmill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, waterwheels, and all other machinery and appliances used in connection with said sawmill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind

and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One hundred and Twenty-five (\$125.00) Dollars per month, payable in gold coin of the United States on the first day of each month during the term of said lease at the office of the lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without the written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are. [940]

It is the intention of the Lessees to erect, equip and maintain upon said premises a water power plant of substantial size and efficiency for the generation of electric power, and if at any time after Two (2) years from the date hereof the lessor or its assigns shall elect to take a current of *not to exceed three hundred* (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its as-

signs to the lessee of a deed or deeds conveying said leased property herein described to the party of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to [941] do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them they shall become the property of the lessor and remain covered by this lease and subject to all terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon,

so that any successor or successors in interest to the lessor and or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described by conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased by placed in escrow so as to ensure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or lessees then the property and rights herein described with all the improvements that are or that may hereafter be placed on the said premises shall be and become the property of the lessor.

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control. [942]

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first above written.

(Executed in triplicate.)

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY.

By WALLACE HACKETT,

President,

And HENRY ENDICOTT,

Treasurer,

[Seal Oxford Mining Company.]

ALASKA TREADWELL GOLD MINING
COMPANY.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING
COMPANY.

By H. H. TAYLOR,

President,

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING COM-
PANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

[Seal Alaska Treadwell Gold Mining Company.]

[Seal Alaska Mexican Gold Mining Company.]

[Seal Alaska United Gold Mining Company.]

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered that on this 14th day of October, 1909, before me, the undersigned, a Notary Public, in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a corporation organized under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such President and such Treasurer; and said Henry [943] Endicott having affixed the seal of said Corporation to said instrument, they severally acknowledged to me that he, Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation executed the foregoing instrument for and on behalf of said Corporation, as the free and voluntary act of said Corporation for the uses and purposes therein set forth. Then the said Henry Endicott, by me being first duly sworn, on his oath states that he is the Treasurer of said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation and that the seal hereinbefore affixed is the corporate seal of said Corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof I have hereunto set my hand and seal the date and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,
Notary Public.

My commission expires Dec. 5th, 1913.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November in the year one thousand nine hundred and nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary respectively, of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, the corporations that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same. [944]

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of
San Francisco, State of California.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On this 12th day of November in the year One

Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary, respectively, of Alaska Treadwell Gold Mining Company, the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to, me that such Corporation executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,

Notary Public in and for the City and County of San Francisco, State of California. [945]

**CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA TREADWELL GOLD MINING
COMPANY.**

“Resolved that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby

approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Treadwell Gold Mining Company; that the foregoing resolution is a full, true and correct copy of a resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Treadwell Gold Mining Company. [946]

**CERTIFIED COPY OF RESOLUTION PASSED
BY THE BOARD OF DIRECTORS OF
ALASKA MEXICAN GOLD MINING COM-
PANY.**

“Resolved that the proposed lease dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company, Alaska Mexican Gold Mining Company and Alaska United Gold Min-

ing Company, be, and the same is hereby approved and accepted, and the President and Secretary are hereby authorized and directed, in the name of the Company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska Mexican Gold Mining Company; that the foregoing resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

[Corporate Seal]

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska Mexican Gold Mining Company.

CERTIFIED COPY OF RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF ALASKA UNITED GOLD MINING COMPANY.

“Resolved that the proposed lease, dated October 14th, 1909, of certain real property particularly therein described and situated on and near Sheep Creek in the Harris Mining District, [947] Alaska, made by and between Oxford Mining Company and Alaska Treadwell Gold Mining Company,

Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, be and the same is hereby approved and accepted and the President and Secretary are hereby authorized and directed, in the name of the company and as its act and deed and under its corporate seal, to execute and deliver said lease to Oxford Mining Company.”

CERTIFICATE OF SECRETARY.

I, F. A. Hammersmith, hereby certify that I am the Secretary of Alaska United Gold Mining Company; that the foregoing Resolution is a full, true and correct copy of a Resolution duly passed and adopted by the Board of Directors of said Company at a meeting held on the 11th day of November, 1909, as the same is now, recorded on the minutes of the meeting of said Board of Directors.

In Witness Whereof I have hereunto set my hand as such Secretary and affixed the corporate seal of said Company, this 11th day of November, 1909.

(Corporate Seal)

(Signed) F. A. HAMMERSMITH,
Secretary of Alaska United Gold Mining Company.

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

WHEREAS the International Trust Company, a corporation, has reserved unto itself for the benefit of itself and various persons therein interested a lien upon the property described in the foregoing lease for the sum of \$36,376, to secure the costs, advances, and charges in connection with the foreclosure of certain trust deeds upon certain property in

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the District of Alaska, a part of which is described in the [948] foregoing instrument.

NOW, THEREFORE, THIS INSTRUMENT WITNESSETH That in consideration of the covenants contained in the foregoing agreement said International Trust Company for the purpose of binding the interest so held upon said property by said lien, assents, agrees and ratifies the execution of the foregoing lease with the Alaska-Treadwell Gold Mining Company et al., Party of the Second Part, and agrees to substitute said lien upon any contract or contracts which may be made pursuant to the options contained in the said lease, so that the terms and provisions of said contract may be carried out.

Executed in triplicate.

Signed this 14th day of October, 1909.

INTERNATIONAL TRUST COMPANY.

By JNO. M. GRAHAM, Pres.

[Corporate Seal]

HENRY L. JEWETT, Sect.

Witnesses:

WALTER W. BLACK.

HAROLD LAWRENCE.

Commonwealth of Massachusetts,

County of Suffolk,

City of Boston,—ss.

Be it remembered that on the 14th day of October, 1909, before me, the undersigned Notary Public, in and for said county and State, personally appeared John M. Graham, and Henry L. Jewett, Secretary of the International Trust Company, a corporation

organized under the laws of the state of Massachusetts, to me known to be the individuals described in and who executed the foregoing instrument, as such President and Secretary for and on behalf of said International Trust Company as Trustee for the mortgage bondholders under said instrument described; the said Henry L. Jewett having affixed the seal of said corporation to said instrument and they severally acknowledged to me that he, John M. Graham as president, [949] and he, the said Henry L. Jewett, as Secretary of said Corporation, executed the foregoing instrument for and on behalf of said corporation as the free and voluntary act and deed of said corporation as Trustee for the uses and purposes therein set forth.

Then the said Henry L. Jewett being by me first duly sworn on his oath states that he is the Secretary of said Corporation, is acquainted, is the custodian, and has in his possession the corporate seal of said corporation and that the seal hereinbefore affixed is the corporate seal of said corporation and was affixed by him as such Secretary by order of the Board of Directors of said Corporation.

IN WITNESS WHEREOF I have hereunto set my hand and official seal the day and year first above written.

[Notarial Seal]

(Signed) LLOYD A. FROST,

Notary Public.

My commission expires Dec. 5th, 1913."

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

WHEREAS the International Trust Company a corporation has reserved a lien upon the property described in the foregoing lease together with other property.

Now for the purpose of further securing said lien, the undersigned lessor in the foregoing instrument, by order of its Board of Directors, hereby assigns the rentals due or to become due under the foregoing lease to the International Trust Company to be applied, first upon the payment of interest of the \$15,000. item of compensation reserved in favor of said Trust Company at the rate of six per cent (6%) per annum, and second that the balance of said moneys be applied [950] pro rata upon the other items described in said lien so reserved.

Dated this 14th day of October, 1909, at Boston, Mass.

(Signed) OXFORD MINING COMPANY.
By WALLACE HACKETT,
President.

Attest: HENRY ENDICOTT,
Secretary. [951]

AND WHEREAS, thereafter on the 31st day of October, 1910, the water-power plant provided for in the fourth paragraph of said agreement was duly erected and equipped prior to that time, and the party of the first part duly elected to take the current of electric power provided for in said indenture and agreement of October 14, 1909, which said elec-

tion was agreed and consented to by the parties of the second part;

AND WHEREAS, thereafter in the month of January, 1911, a certain instrument purported to have been executed by Joseph T. Gilbert, party of the first part, and Alaska Perseverance Mining Company, a corporation, party of the second part, was spread on the records of the Juneau Mining District, and is in words and figures following, to wit:

THIS INDENTURE made this 3rd day of December, 1910, between Joseph T. Gilbert, of Gilbertsville, Otaega County, State of New York, party of the first part, and the Alaska Perseverance Mining Company, a corporation organized and existing under the laws of the State of New York, *partly* of the second part; WITNESSETH:

That the said party of the first part for and in consideration of One Dollar and other good and valuable consideration, the receipt whereof is hereby acknowledged, does by these presents grant, bargain, sell, remise, release, convey and confirm to the said party of the second part, his successors and assigns the property described in the following agreement.

THIS AGREEMENT made and entered into this seventeenth day of June, A. D. 1897, by and between Joseph T. Gilbert, of the City of Milwaukee, State of Wisconsin, party of the one part, and the Nowell Gold Mining Company, a corporation organized under the laws of the State of Maine, and doing business in the District of Alaska, the party of the other part.

WITNESSETH:

That whereas the said Joseph T. Gilbert has sold by deed given June 16, 1897, to the said Nowell Gold Mining Company, a certain mill-site, water rights, saw-mill, and appliances, situate at Sheep Creek in the Harris Mining District, District of Alaska, for the sum of Twenty-five Thousand (\$25,000.) dollars, and other good and valuable considerations herein-after specifically set forth.

Now therefore, it is understood by and between the parties hereto that in case the said Joseph T. Gilbert, his heirs or assigns, should at any time desire to develop by tunnel, or otherwise, or to operate any of the property, formerly owned by the Juneau Mining and Manufacturing Company, that he and they shall have the right and preference to take and use any surplus water not required by the said Nowell Gold Mining Company for use in [952] operating their own properties at Sheep Creek and in Silver Bow Basin in said District; that he or they may draw the surplus water from any point of flumes or pipe lines belong to said Company, providing that it may be done without expense to the said Nowell Gold Mining Company, and that it shall not interfere with the operations of the properties, or the business of said Company; it is further understood and agreed that the said Nowell Gold Mining Company shall have the right and privilege to sell or dispose of any power to other parties arising from said surplus water when the same shall not be needed or required by the said Joseph T. Gilbert, his heirs, or assigns, in operating any plant that may be erected by him, his heirs or assigns, in working

or developing his properties acquired from the Juneau Mining and Manufacturing Company. It is further hereby stipulated and agreed by and between the parties hereto, that in case of sale by the Nowell Gold Mining Company of its mines, mills, millsites, and water rights, or any part of same, situated at Sheep Creek and in Silver Bow Basin, in the District aforesaid, to any person, persons, or corporations, that the said Nowell Gold Mining Company shall not have the right to dispose the said water right hereby acquired from the said Joseph T. Gilbert, to any person persons or corporations, other than for the purpose of operating the property held and owned by the said Nowell Gold Mining Company at Sheep Creek in the District aforesaid, at the time of said sale, provided that said Joseph T. Gilbert shall require the use of said water or the power generated thereby.

It is further understood and agreed by the parties hereto that the said Joseph T. Gilbert, his heirs or assigns shall be entitled to use for millsite or power purposes a frontage of not more than four hundred (400) feet commencing at post number two (2) of that certain piece or parcel of land formerly held and owned by one Kittie Richardson, adjoining the Jumbo Mill-site and extending thence along the beach in a southeasterly direction four hundred feet and extending back from the beach three hundred thirty-one and four-tenths ($331\frac{4}{10}$) feet.

It is further understood and agreed by and between the parties hereto that the said Joseph T. Gilbert, his heirs or assigns shall have a right of way

over and upon the land of said Nowell Gold Mining Company situate in the vicinity of Sheep Creek, District of Alaska, and that the said Nowell Gold Mining Company shall have a right of way over and upon the premises comprising four hundred (400) feet in length by three hundred thirty-one and four-tenths ($331\frac{4}{10}$) feet reserved by the said Joseph T. Gilbert as herein set forth.

It is further understood and agreed by and between the parties hereto that the said Joseph T. Gilbert shall have the use and benefit as well as the possession of that certain saw-mill known as the Sheep Creek saw-mill and situate near the mouth of Sheep Creek up to and until January 1, 1900, and that he shall have for the purpose of operating and running said mill all the water necessary from said Sheep Creek flume and pipe-line to operate said mill; or in the event of electric power to replace said water, then the said Nowell Gold Mining Company shall furnish, free of cost to the said Joseph T. Gilbert, all the power necessary to operate the said mill.

It is further understood and agreed by and between the parties hereto that that certain building and machinery thereto used as a dry house, situate near the saw-mill, is the property of William T. Iliff, and is no way effected by the sale from the said Gilbert to the said Nowell Gold Mining Company. It is further understood and agreed by and between the parties hereto that in [953] case the said saw-mill shall be destroyed by fire that neither party shall be held responsible, one to the other. It is

mutually understood and agreed by and between the parties that the water and ground privileges in favor of the said Joseph T. Gilbert are an essential and integral part of this contract and that the Nowell Gold Mining Company obligates itself and assigns to aid and assist without expense to itself in every way possible the said Joseph T. Gilbert to the use of such privileges.

IN WITNESS WHEREOF the said Joseph T. Gilbert has hereunto set his hand and seal this twenty-third day of June, A. D. 1897, and the said Nowell Gold Mining Company by its president and by authority of the Board of Directors of said Company has set the seal of its President this 17th day of June, A. D. 1897.

JOSEPH T. GILBERT,
NOWELL GOLD MINING COMPANY.

By THOMAS S. NOWELL, Its Pres.

In Presence of:

J. J. MALONY.

JOHN R. WINN.

M. H. LATIMER.

E. F. CASSEL.

The above agreement is endorsed as follows:

DISTRICT OF ALASKA,
JUNEAU,—ss.

The within instrument was filed for record at 2:30 o'clock P. M. June 27th, 1899, and duly recorded in Book 15 of Deeds, etc., on page 472 of the records of this district.

Sgn.—NORMAN E. MALCOLM,
District Recorder,

For a full and accurate description of the property conveyed by the said party of the first part to the said party of the second part, the above agreement made between Joseph T. Gilbert and the Nowell Gold Mining Company is here quoted for the purpose of fully describing the property conveyed in this agreement made between the party of the first part and the party of the second part.

IN WITNESS WHEREOF, the party of the first part has hereunto set his hand and seal this 3d day of December, 1910.

JOSEPH T. GILBERT.

Signed, sealed and delivered in presence of

F. H. DONALDSON.

Now therefore pursuant to the agreement of the parties hereto of October 31, 1910, and the election of the party of the first part to take the electric current provided for in the agreement of October 14, 1909, formal conveyance of the said property has been made by the Oxford Mining Company to the parties of the second part;

NOW, THEREFORE, in consideration of the premises, it is hereby agreed that if the parties of the second part hereto are deprived at any time by Alaska Perseverance Mining Company, Joseph T. Gilbert his or their successors or assigns, of any of the water now appropriated and used by the second parties out of Sheep Creek at their power plant, then the party of the first part shall only be entitled to the three hundred (300) horse-power of electric current provided in the agreement dated October 14th, 1909, decreased by the number of horse-power

that could be [954] generated by the second parties at their plant with the water which the second parties may have been deprived by Alaska Perseverance Mining Company, Joseph T. Gilbert, his or their successors or assigns.

IN WITNESS WHEREOF, the party of the first part has hereunto set its hand and seal the day and year first above written.

OXFORD MINING COMPANY.

By WALLACE HACKETT,

President.

HENRY ENDICOTT,

Treasurer.

Signed, sealed and delivered in the presence of

LEWIS P. SHACKLEFORD.

L. W. LATTIMORE.

The above and foregoing finding was made by the Court this 12th day of June, 1913.

PETER D. OVERFIELD,

Judge. [955]

This finding was made and adopted by the Court this 12th day of June, 1913.

PETER D. OVERFIELD,

Judge.

Which said finding was requested by the defendant was then and there made and adopted by the Court as a Finding of the Court, and the signature of the Judge appended thereto. [956]

Thereupon the defendants requested the Court to make Finding No. IV, as requested by the defendants, which said finding so requested is in words and figures as follows: [957]

FINDING OF FACT No. IV.

The Court finds that under and pursuant to the agreements, contracts and arrangements made between the parties and elsewhere referred to in these findings, the defendant corporations had constructed and did construct at Sheep Creek in the Territory of Alaska, an electric power plant of the capacity of approximately 2,600 horse-power, which said power plant was constructed and completed within the time agreed upon and in the manner agreed upon in full compliance with the agreements herein elsewhere referred to; that at a time after the construction of said plant and prior to the commencement of this action demand was made upon the defendant companies to furnish a current agreed to be furnished to the Oxford Company, which said demand was made by the plaintiff herein, and the plaintiff then and there also notified the defendant companies that it had succeeded to the rights of the Oxford Company in that behalf; and that the rights of said Oxford Company had been assigned to the plaintiff company; that immediately upon demand having been made in that behalf steps were taken to connect the transmission lines of the plaintiff company with the bus-bars *of at* the power plant of the defendant companies, and that from that time on including the time when this action was commenced the defendant companies made available for the use of the plaintiff company and permitted the plaintiff company to take from its bus-bars at its said power plant an electric current of approximately 60 amperes with a voltage of 2,300 impressed.

Above finding refused as already found and exception allowed.

PETER D. OVERFIELD,
Judge. [958]

That the defendants by counsel duly and regularly excepted to the refusal and failure of the Court to find the facts set up in said Finding No. IV above referred to, which exception was then and there allowed by the Court. [959]

The Court refused to make said finding or adopt the same for the reason, among others, that the substance thereof was included within a finding which the Court himself had prepared; to the refusal of the Court in so finding said finding No. IV requested by defendants, the defendants by counsel then and there excepts, which exception was then and there allowed by the Court. [960]

Thereupon the defendants then requested the Court to make and adopt as its finding Finding No. V, requested by the defendants, which is in words and figures as follows: [961]

FINDING OF FACT No. V.

The Court further finds that 300 horse-power can be developed from an electric current of 56.2 amperes with a voltage of 2300 impressed.

Above finding refused this 13 day of June, 1913, and exception allowed defendants to such refusal.

PETER D. OVERFIELD,
Judge.

[962]

To which failure of the Court to so find the facts so stated in Finding No. V and the refusal to make

said finding, the defendants by counsel duly excepted, which exception was then and there allowed by the Court. [963]

Which finding so requested was refused by the Court for the reason, among others, that the substance thereof was embraced in findings previously prepared by the Court, to which order and ruling of the Court the defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [964]

Thereupon the Court made and entered its findings in addition to the two findings above referred to as having been made and entered by the Court; which are in words and figures as follows: [965]

[Findings.]

FINDING OF FACT No. I.

That the plaintiff is a corporation duly organized and existing and formerly known as the Alaska Perseverance Mining Company and now known and existing under the name of the Alaska Gastineau Mining Company.

FINDING OF FACT No. II.

That the defendants above named are corporations duly organized and existing except the defendant Robert A. Kinzie, and that the said Robert A. Kinzie is superintendent of each of the defendant corporations above named. [966]

FINDING III.

That on and prior to the month of August, 1909, the International Trust Company was a corporation and in possession and control for the benefit of its

bondholders of a certain water-power plant at the mouth of Sheep Creek near Juneau, in the District of Alaska, which said water-power plant is more fully described in the agreement between the Oxford Mining Company, a corporation, and the defendant corporations, above named, dated October 14, 1909, which is hereinafter set forth. That the said water-power plant at and prior to said time had an installed generating equipment of 370 horse-power, and that the said water-power plant had been used for the purpose of furnishing power to what is known as the Sheep Creek Mines, which was claimed by the International Trust Company and its bondholders and that the operation of the said mine required not less than 260 actual horse-power in uninterrupted use for its continuous operation, exclusive of any additional surges of power necessary to start the operation of the said mine and mining machinery therein installed.

And which said finding was made by the Court over the objection of the defendants that the same was contrary to the evidence, not supported by the evidence, and the finding was not within the issues in that the evidence did not show that the International Trust Company was possessed at the time referred to, or any other time, of the water-power plant, in said finding referred to, nor that said water-power plant or any water-power plant, owned by said International Trust Company was possessed of a generating capacity or equipment of 370 horse-power, nor did the evidence show that the said International Trust Company or its bondholders claimed,

at that time, or any other time, the Sheep Creek Mines, nor did the evidence prove or tend to prove that said mine required not less than 260 actual horse-power [967] for the operation, but the evidence on the contrary conclusively shows that said mine could be operated with 150 horse-power. And said finding in the whole and every part thereof relates to matters that are immaterial in this case, in that the rights of the parties depend upon a certain contract which is in writing and must rest and be determined by the terms of that contract which cannot be varied or modified by extrinsic facts, circumstances or agreements. All of which objections were by the Court overruled, and to such ruling and order of the Court counsel for defendants then and there excepted, which exception was allowed by the Court. [968]

FINDING IV.

That prior to the month of August, 1909, the said power plant had actually been used by the International Trust Company and its predecessors in interest for the purpose of and in connection with the generation of power for the operation of the said Sheep Creek mines which said mines were provided with railways, trams, compressors, lighting plant, two rock crushers, one 30-stamp mill, two hoists and other ordinary appliances used in connection with the operation of a mine.

Defendants objected to the making of Finding No. IV on the ground that it was contrary to the evidence, not supported by sufficient evidence, and not within the issues, more expressly so for the reasons follow-

ing, that the rights of the parties depend upon the construction and terms of a certain written contract sued upon, and that all the matters and things referred to in the finding are immaterial and outside of the issues, in that the said contract or contracts cannot be varied, modified or explained by extrinsic facts, which said objection and each of them were then and there overruled by the Court, to which ruling and order of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [969]

FINDING V.

That on and prior to August, 1909, the International Trust Company was not only in possession and control of the said Sheep Creek power plant, but was also in possession and control of mines near Juneau, Alaska, known as Silver Bow Basin Mines, including the Ground Hog group of mines, and also claimed equitable title to the Sheep Creek group of mines before mentioned, which said latter group the said power plant had theretofore been used to operate.

That the defendants object to making of said Finding No. V on the ground that it was contrary to the evidence and not supported by sufficient evidence and that the finding was not within the issue, for the special reason, among others, that the rights of the parties must be determined in accordance with a written contract sued upon which cannot be varied, modified or explained by extrinsic facts or circumstances, or by any of the matters or things related to in said findings, which objection was then and there overruled by the Court, to which order and ruling of the

Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [970]

FINDING VI.

That in the month of August, 1909, F. W. Bradley approached L. P. Shackelford, the attorney for the International Trust Company and also attorney for the defendant companies herein, and stated that it was the desire of the defendant corporations to secure possession and control of the said Sheep Creek Power plant and construct upon the mill sites, upon which said power plant was situated, a water-power plant of substantial size and efficiency of a producing capacity of about 3,000 horse-power, and that it was the desire of the defendant corporation upon the construction of such power plant to provide that the said International Trust Company or its successors have sufficient power to operate the mines claimed by the International Trust Company known as the Sheep Creek mines and accept in exchange a deed for the Sheep Creek power plant. That at said time the said F. W. Bradley was consulting engineer of the defendant companies and had full charge of their operations, constructions and development with full authority to represent the said companies and with him at that time was H. H. Taylor, the then president of the defendant companies, who concurred in the representations of said F. W. Bradley. That the said F. W. Bradley at said time represented that an uninterrupted current of 200 horse-power continuously at the disposition of the said International Trust Company, or its assigns, would operate the

Sheep Creek mines and that said statement referred to the ordinary electric load necessary to the operation of the mines and the mining machinery appurtenant thereto, and did not include an estimate of the amount of power momentarily necessary to start machinery that would uninterruptedly consume or use 200 horse-power. That thereupon a draft of a contract between the defendants herein [971] and a company to be organized by the International Trust Company was drawn at Juneau, Alaska, upon the dictation and approval of the said F. W. Bradley and the defendant companies for presentation to the International Trust Company and its bondholders, which said draft was in words and figures identical with the contract of October 14, 1909, between the Oxford Mining Company and the defendant companies, hereinafter set forth, except that where the words "three hundred horse-power" appear in the body of the said contract of October 14, 1909, the words "two hundred horse-power" originally appeared in the body of said contract, and that after the said draft of the said contract had been made said F. W. Bradley wrote a letter to Henry Endicott, the principal bondholder interested in the said power plant in words and figures as follows, to-wit:

"Treadwell, Alaska, August 10, 1909.

Henry Endicott, Esq.,
101 Tremont Street,
Boston, Mass.

Dear Sir:

We have been talking to Mr. L. P. Shackleford about your water right on Sheep Creek in this dis-

trict and both *me* and ourselves have agreed upon what we consider an extremely fair proposition our concession have been drawn up in the shape of a document which Mr. Shackleford will present to you as it is now this sheep creek water power is in jeopardy and can be taken at any time by adverse interests our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you are holding this water right for the value that it has had and may have in the future for working the sheep creek mines and thirty stamp mill connected therewith estimating conservatively 150 HP is all the power these mines and mills ever required for thier past operations. The mill is amply large enough for the mine and surely two hundred H. P. will more than take care of future requirements if the proposition is all acceptable to you we would begin immediate work thereby preserving your rights and returning you some monthly income the proposition provides amply time in which you could decide either to sell the property outright or take two hundred H. P. for the operation of the mines and mill, yours very truly,

F. W. BRADLEY."

At the request of said F. W. Bradley the said L. P. Shackleford departed for Boston to present the said draft of agreement [972] to the said Henry Endicott and the International Trust Company.

Defendants objected to making of said Finding No. VI, on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that finding was not within the issues, for the following reason,

among others, that the contract sued upon is in writing, that the negotiations, agreements and understandings had between the parties prior to its execution are immaterial, that the terms of the contract cannot be varied, explained or modified by extrinsic evidence or by facts or circumstances referred to in the Court's findings, all of which objections were then and there overruled by the Court, to which order and ruling of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [973]

FINDING No. VII.

That upon the presentation of the said draft of agreement by the said L. P. Shackleford, the parties interested in the said power plant made an investigation as to the amount of power actually needed by them in continuous operation, exclusive of the amount necessary for any momentary starting surges for their machinery, which matter of surges was not discussed between the parties to the contract, and ascertained that they would need the continuous use of 300 horse-power and accordingly the said Henry Endicott sent to the said F. W. Bradley the following telegram:

“Boston, August 23, 1909.

F. W. Bradley,

Wardner, Idaho.

Will lease power on terms proposed subject to consent trust company if three hundred horse power is substituted for two hundred.

HENRY ENDICOTT.”

and received in reply thereto from the said F. W. Bradley the following telegram:

“Henry Endicott:

You may substitute three hundred for two hundred horse power may I cable Sup’t Kinzie to begin immediate protection measure.

F. W. BRADLEY.”

Thereafter the said International Trust Company and the bondholders beneficially interested in the said property transferred the said property to the said Oxford Mining Company and caused the said Oxford Mining Company to make and execute an agreement with the defendants, above named, which said agreement was also made and executed by the defendants, which said agreement was and is in the following words and figures, to wit: [974]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between OXFORD MINING COMPANY hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

WITNESSETH,—First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska to wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Bellvidere Mill-site U. S. Mineral Entry No. 25, lot 72B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain

piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel, thence first course along the meander line of Gastineau Channel at ordinary high water mark N. 52.00' W. 54 feet to stake No. 2; thence second course N. 48° 15' E. 200 feet to stake No. 3; thence S. 52.00' E. 54 feet to the N. W. side line of Jumbo Mill-site U. S. Survey No. 260 to stake No. 4; thence S. 46 15' West along the Northwest side line Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning containing an area of one-quarter of an acre more or less courses expressed from the true meridian, Mag. Var. 29.30'; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three-quarters of a mile from its mouth together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the saw-mill, penstocks, waterwheels, and all other machinery and appliances used in connection with said saw-mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly [975] rental of One Hundred and Twenty-five (\$125.00) dollars per month, payable in gold coin of the United States on the first day of each month during the term of said lease at the office of the lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the cove-

nants herein contained, that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said terms the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

It is the intention of the Lessees to erect, equip and maintain upon said premises a water-power plant of substantial size and efficiency for the generation of electric power, and if at any time after two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the party of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior

to the expiration of the ten (10) years provided in this lease purchase the property leased absolutely from [976] the lessor by paying to the lessor the sum of Twenty-five Thousand dollars (25,000.) in gold coin of the United States; and the lessor covenants and agreed upon tender of said sum of Twenty-five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one-quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf to the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them they shall become the property of the lessor and remain covered by this lease and subject to all terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so, that any successor or successors in interest to the lessor and or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessess hereof may require at their option that the property herein described be conveyed by the lessor to a responsible Trustee for the purpose of carrying *at* the terms of this agreement, or that deeds and conveyances cover-

ing the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or lessees then the property and rights herein described with all the improvements that are or that may hereafter be placed on the said premises shall be and become the property of the lessor. [977]

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first above written. (Executed in triplicate.)

Witness:

HAROLD LAWRENCE,
WALTER W. BLACK.

OXFORD MINING COMPANY.

By WALLACE HACKETT,
President.

And HENRY ENDICOTT,
Treasurer.

[Seal Oxford Mining Company]

vs. Alaska Gastineau Mining Company. 1067

ALASKA TREADWELL GOLD MINING
COMPANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA MEXICAN GOLD MINING COM-
PANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

ALASKA UNITED GOLD MINING COM-
PANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

[Seal Alaska Treadwell Gold Mining Company]

[Seal Alaska Mexican Gold Mining Company]

[Seal Alaska United Gold Mining Company]

Commonwealth of Massachusetts,

County of Suffolk,

City of Boston,—ss.

Be it remembered that on this 14th day of Oc-
tober, 1909, before me, the undersigned, a Notary
Public, in and for said County and State, personally
appeared Wallace Hackett, President, and Henry
Endicott, Treasurer, of the Oxford Mining Company,
a corporation organized [978] under the laws of
the State of Maine, to me known to be the individ-
uals described in and who executed the foregoing

instrument as such President and Treasurer; and said Henry Endicott having affixed the seal of said Corporation to said instrument they severally acknowledged to me that he, Wallace Hackett, as President, and he Henry Endicott, as Treasurer of said Corporation executed the foregoing instrument for and on behalf of said Corporation, as the free and voluntary act of said Corporation for the uses and purpose therein set forth. Then the said Henry Endicott, being by me first duly sworn, on his oath states that he is the Treasurer of said Corporation, is acquainted and is the custodian, and has in his possession the corporate seal of said Corporation and that the seal hereinbefore affixed is the corporate seal of said Corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

In Witness Whereof I have hereunto set my hand and seal the date and year first above written.

[Notorial Seal]

(Signed) LLOYD A. FROST,

Notary Public.

My commission expires Dec. 5th, 1913.

State of California,

City and County of San Francisco,—ss.

On this 12th day of November in the year one thousand nine hundred and nine, before, me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor, and F. A. Hammersmith, known to me to be the President and

Secretary respectively of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, the corporations that executed the within and foregoing instrument and to be the officers who executed the said instrument on behalf of said corporations therein named, and they acknowledged to me that such corporations executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of San Francisco, State of California.

State of California,
City and County of San Francisco,—ss.

On this 12th day of November, in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary, respectively, of Alaska Treadwell Gold Mining Company, the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in

said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of San
Francisco, State of California. [979]

And the Court finds from the surrounding circumstances that it was the intention of the said Oxford Mining Company and of the defendant companies to provide to the said Oxford Mining Company the beneficial and uninterrupted use of 300 actual horse-power, including such starting surges and other conditions which would reasonably insure to the said Oxford Mining Company and its successors the right to use 300 actual horse-power in connection with the ordinary machinery used in mining and the ordinary forms of induction motors in common use in mining for loads of 300 horse-power or less. The Court further finds that for loads of 300 horse-power or less induction motors having an inherent phase displacement and power factor less than unity were in ordinary and practical use in mining, and that the use of said ordinary and practical machinery in mining operations was contemplated by the defendants at the time of the execution of the contract, and that the power contracted for was 300 actual horse-power as distinguished from 300 apparent horse-power, and that the contract contemplated the practical and beneficial use of 300 actual horse-power as ordinarily spoken of and ordinarily measured by common and ordinary instruments for the measurements of horse-power. The Court further finds that

the common and ordinary instrument and device in universal use for the measurement of horse-power was and is the wattmeter, which measures actual as distinguished from apparent power.

The Court further finds that in making the said contract the said Oxford Mining Company relied, and had a right to rely, upon the representations made by the said defendant companies to the effect that it was the purpose of defendant companies to furnish the amount of power stipulated in the contract in real, actual and practical working efficiency, together with such momentary surges necessary to start the [980] machinery of the Oxford Company, or its successors, now to give to the Oxford Company or its successor the uninterrupted use of 300 real horse-power to be used in connection with ordinary motors commonly used upon loads of 300 horse-power or less, including induction motors.

Defendants objected to making of said finding No. VII on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that the finding was not within the issue, more expressly for the following reason, and in the following particulars; that that portion of the finding preceding the contract as set up in said finding is immaterial and not within the issue of the case, for the reason that the contract between the parties was in writing and could not be varied, explained or modified by the extrinsic facts or circumstances referred to in the finding, all of such matters having merged in the contract itself. And that portion of the finding which follows the contract as set out therein is more ex-

pressly objected to for the reasons following, that the Court finds from the surrounding circumstances that it was the intention of the parties to provide the Oxford Mining Company with the beneficial and uninterrupted use of the 300 actual horse-power, including such starting surges and which would reasonably insure to the said Oxford Mining Company and its successors the right to use 300 actual horse-power in connection with the ordinary machinery used in mining and the ordinary forms of induction motors in common use in mining for loads of 300 horse-power or less. In this portion of the finding the Court finds what the intention of the parties was not from the contract itself but from the surrounding circumstances, and, in effect, makes between the parties a contract different from that which they had themselves made in [981] writing. The Court then finds that certain forms of induction motors having an inherent phase displacement and a power factor less than unity were in common use and were contemplated by the defendants at the time of the execution of the contract. This portion of the finding is also immaterial and not based upon any evidence whatsoever. The Court then finds that the power contracted for was 300 actual horse-power as distinguished from 300 apparent horse-power, and that the contract contemplated the practical and beneficial use of 300 actual horse-power as measured by wattmeter. This portion of the finding is objectionable, more expressly in this, that if it is based upon a construction of the contract itself, the contract is erroneous; if based upon evidence outside

of the contract it is immaterial, since the contract cannot be varied, explained or modified by such evidence, and, in any event, the same is not supported by any evidence in the case. The Court then proceeds to find that the Oxford Mining Company had a right to rely upon the representations made by the defendant companies to the effect that it was the purpose of the defendant companies to furnish the amount of power stipulated in the contract in real, actual and practical working efficiency, together with such momentary surges necessary to start the machinery of the Oxford Company or its successors, the uninterrupted use of 300 real horse-power to be used in connection with ordinary motors commonly used upon loads of 300 horse-power or less, including induction motors. The objection to this portion of the finding is more especially that there is no evidence upon which to base it, no such representations having been made. Further, that the Court speaks for itself as to what is to be furnished, and that if the finding is intended as a construction of the contract itself, it is erroneous in that the contract provides [982] for the furnishing of a current of not to exceed 300 horse-power, and does not provide for the delivery of power at all, and that if said finding is not based upon the contract itself but upon extrinsic evidence, then the same is immaterial and not within the issue in the case, for the reason that the terms of the written contract sued upon cannot be varied, modified or explained by intrinsic facts or evidence, and the relief of the parties, if any, might be measured by the terms of that contract it-

self. Each and all of which said objections were overruled by the Court, to which ruling and order of the Court counsel for the defendants then and there excepted, which exception was allowed by the Court.

[983]

FINDING VIII.

The Court further finds that the defendant corporations herein completed the construction of the water-power plant provided for in the said agreement of October 14, 1909, prior to the 31st day of October, 1910, and that on the 31st day of October, 1910, the said Oxford Mining Company elected to take the 300 horse-power provided for in the said agreement for its full benefit and practical and uninterrupted use, and elected to convey the property heretofore described in the said contract of October 14, 1909, to the defendant corporations, and that the defendant corporations accepted said election and waiver the two years' time prescribed in said contract for the making of the said election, and that the said Oxford Mining Company duly conveyed to the defendant corporations all of the property described in the agreement of October 14, 1909, on or about the 22d day of April, 1911. The Court further finds that from the 22d of April, 1911, to the 8th of November, 1912, the Oxford Mining Company, or its successors, did not receive any of the power contracted for from the defendant corporations.

To the making of Finding VIII defendants objected, on the ground that it is contrary to the evidence, not supported by sufficient evidence and the finding was not within the issues, more especially

for the reason that the contract between the parties is in writing and the terms of the contract speak for themselves as to the rights of the respective parties, that the same cannot be varied, modified or explained by extrinsic evidence, or by any extrinsic facts or circumstances. Objection is further made to that portion of the finding which relates to the failure to deliver power before November, 1912, for the reason that the evidence conclusively shows that no [984] demand for power or current was made during that period and no complaint was made because power or current was not, during that period, delivered. Each and all of which said objections were overruled by the Court, to which ruling and order of the Court counsel for the defendant then and there excepted, which exception was allowed by the Court. [985]

FINDING IX.

On or about the 1st of June, 1912, the Oxford Mining Company sold its property and property rights in Southeastern Alaska to the plaintiff company, including the rights growing out of the said contract of October 14, 1909, and the Court further finds that the plaintiff company is engaged in developing its mines in Sheep Creek and Silver Bow Basin, both from the Sheep Creek and Silver Bow Basin side, and is engaged in pushing its development work as rapidly as possible, and that the said prosecution of the said development work involves the speedy application of the power available to the plaintiff company, and that if the plaintiff company is deprived of said power, its progress will be greatly

delayed and interest burdens upon its bonds and other expenses will be greatly increased, and that there is no other source of power for the carrying on of the plaintiff's development work, and that the plaintiff will be greatly and irreparably damaged if it is deprived of the power provided for in the said contract of October 14, 1909, and that said damage cannot be compensated at law or ascertained.

To the making of said finding No. IX, defendants object on the ground that is contrary to the evidence, not supported by sufficient evidence, and the finding is immaterial and not within the issue, which objections were each and all, then and there, overruled by the Court, to which ruling and order of the Court the defendants then and there excepted, which exceptions were then and there allowed by the Court. [986]

FINDING No. X.

That the arrangements for the development of the plaintiff's mining property were made in reliance upon the contract of the defendant corporations herein that they would furnish an uninterrupted current of 300 electric horse-power for the actual and practical use of the plaintiff corporation, and that relying upon said contract and representations of the defendants, the plaintiff engaged a force of over 175 men to perform its underground development work in its Perseverance mine at Silver Bow Basin, and that the daily expense of maintaining said working force is \$750.00, and that the plaintiff has outstanding bonds in the principal sum of \$3,500,000.00, upon which interest is accumulating and upon which

no interest can be paid until the development work of the plaintiff company is completed. That the deprivation of the plaintiff of the power so contracted for will greatly delay the date when the mines of the plaintiff company will become productive and will cause the plaintiff herein to discharge a number of its laborers, and it will be difficult to secure further laborers upon the resumption of the plaintiff's work unless the same are kept continuously at work.

That the defendants objected to the making of said finding on the ground that the same was contrary to the evidence, not supported by sufficient evidence and was not material, and not within the issues which said objections were then and there overruled by the Court, to which ruling and order of the Court the defendants, by counsel, then and there excepted, which exception was allowed by the Court. [987]

FINDING XI.

That prior to the 8th of November, 1912, the defendant companies were notified of the assignment of the rights of the Oxford Mining Company to the plaintiff, and were requested to deliver the uninterrupted current of 300 horse-power for the use of the plaintiff; and that prior to the 8th of November, 1911, there had been installed upon the property of the plaintiff in Silver Bow Basin at its Perseverance Mine a 200 horse-power motor of the usual type in mining operations of like character throughout the United States and in the Juneau Mining District, which said motor was connected with an Ingersoll-

Rand compressor using 165 horse-power at 80 pounds pressure, and that there had been installed at the Sheep Creek plant of the company a 150 horse-power motor and a 20 horse-power motor; and that in connection with the 150 horse-power motor there was used a compressor of 165 horse-power for the purpose of driving an adit tunnel from the Sheep Creek mines to a point underneath the Ground Hog and Perseverance mines; and that on the 8th of November, 1911, the defendant corporations had connected their power plant with the transmission line of the plaintiff company and set in their power-house a so-called automatic circuit-breaker, which said circuit-breaker was set so as to break a circuit when a maximum of between 80 and 100 amperes was being drawn over the transmission line of the plaintiff company. That from the 8th day of November, 1912, to the 2d day of December, 1912, the machinery above described at Sheep Creek was operated without difficulty from said current so supplied by the defendant corporations, and the setting of the said circuit-breaker proved sufficient to produce a sufficient practical working efficiency at the power-house of the defendant company of three hundred horse-power. That on the 2d day of December the machinery of the plaintiff company in the Silver Bow Basin or Perseverance mine was also placed upon the said circuit and successfully operated until the 4th of December, when the operations of the Perseverance mine were temporarily suspended by reason of a fire which [988] destroyed a 100-stamp mill of the plaintiff company at that point. That between the

4th and 6th of December, 1912, one Proebstil, an electrician of the defendant companies, visited the Sheep Creek power-house and reduced the setting of the circuit-breaker to a point which would throw the same out and break the current when more than 60 amperes were drawn through said circuit. The voltage being maintained at about 2,300. That the said circuit-breaker so installed is not of the usual ordinary type used upon feeders leaving power-houses, but is what is known as an instantaneous circuit-breaker; that the ordinary and usual type of circuit-breaker placed upon feeders leaving direct from power-houses is what is known as a thirty-second time relay circuit-breaker which guards against the circuit-breaker being thrown out by momentary and unavoidable surges of current. That the starting of machinery which will consume a given amount of power often causes what is known as a starting surge which lasts from ten to thirty seconds but from a practical standpoint is not taken into account or charged for in electrical connections, and is disregarded and provided against by the use of the ordinary type of time relay circuit-breaker. That in the Juneau Mining District it is not customary for the defendant companies to charge any other customer for the necessary starting surges for machinery connected with the said power-plant of the defendant companies, but that the power is measured upon the amount taken under normal conditions, that is to say, by the amount of power taken after the machinery is started and in operation. [989]

In making of which said finding No. XI defend-

ants objected on the ground that the same was contrary to the evidence, not supported by sufficient evidence, was not within the issues and immaterial, which objections go more especially to the following particular features of the finding.

That the Court finds that an instantaneous circuit-breaker is not the usual ordinary type in use upon feeders leaving power-houses, but that the ordinary type in use is a thirty-second relay circuit-breaker. This part of the finding is contrary to the evidence and is immaterial, the question in the case being not what machinery is ordinarily used but whether the quantity of current furnished complies with the conditions of the contract.

The Court further finds that it is not customary for the defendant companies to charge other customers for necessary starting surges. This part of the finding is immaterial and is directly contrary to all the evidence in the case, the undisputed evidence showing that the defendant companies have no other customer or customers whatsoever; that they are not furnishing electric current to anyone except the plaintiff, with this exception, that they are accommodating the Alaska Juneau Mining Company, a corporation under the same management by temporarily supplying them with current at a high rate, and there is no evidence to show that the Alaska Juneau Mining Company, at any time, used starting surges or current that were not paid for.

Each and all of said objections were then and there overruled by the Court, to which ruling and order of the Court defendants, by counsel, then and there

objected, which objection was then and there allowed by the Court. [990]

FINDING No. XII.

That in establishing the circuit between the plaintiff and the defendant companies the defendant corporations have set their instantaneous circuit-breaker upon a theoretical basis of what is known as unity power factor, that is to say, the defendants have not installed a wattmeter upon said circuit nor set the circuit-breaker upon observations taken from an ammeter and their other meters, such as volt and ampere meters, at the time the wattmeter indicates a consumption of 300 horse-power, but that they have assumed that the power factor of the said circuit is 100 per cent, and multiplied the same by the voltage of 2,300 volts and by the constant attributed to a three-phase electric current. The Court further finds that there is no circuit upon the power lines of the defendant companies, either in connection with the plaintiff or any of their other lines, which has a power factor of unity or 100 per cent. And the Court further finds that at the present time there are no motors other than induction motors used in connection with the power plant of defendant companies. The Court further finds that wherever an induction motor is used the power factor is less than unity and the actual and effective horse-power passing over any circuit under such conditions can only be measured by a wattmeter and the circuit-breakers in connection with such circuits set in accordance with observations taken from a wattmeter. The Court further finds that in the summer of 1912 the

defendants ordered a curve drawing wattmeter to be placed upon the switch board of the circuit between the plaintiff and the defendant companies and that the same is in possession of the defendants but the defendants have not installed said wattmeter. And the Court further finds that the defendants have refused to allow the plaintiff to install a wattmeter upon the panel at the power-house of the defendant companies at which panel connection is made between the transmission line of the plaintiff and the power-house of the defendant companies. The Court [991] further finds that in estimating and measuring the power used by the defendants themselves upon their own circuits the defendants use a wattmeter. The Court further finds that the wattmeter is the common, ordinary and universal device used in measuring horse-power.

That the defendants objected to making Finding No. XII, on the ground that it is contrary to the evidence, not supported by sufficient evidence, on the ground that the finding is not material and not within the issues, each and all of which said objections were overruled by the Court, to which ruling and order of the Court defendants, by counsel, then and there excepted, which exceptions were then and there allowed by the Court. [992]

FINDING No. XIII.

The Court further finds that it is the common practice where a certain amount of horse-power is normally used, for the producing company to allow a reasonable starting surge to the consumer sufficient to start and put in operation machinery which will

normally consume the current provided for.

Defendants objected to the making of Finding No. XIII, on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that it is immaterial and not within the issues of the case; that whatever might be the custom relating to starting surges, this custom would not affect the right of parties in this case, in view of the facts that the rights of the parties are limited and defined by a written contract, explicit in its terms. Each and all of which said objections were then and there overruled by the Court, to which ruling and order of the Court defendants, by counsel, then and there excepted, which exceptions were allowed by the Court. [993]

FINDING XIV.

The Court further finds that on or about the 13th day of December, 1912, an electric current was again turned on to the operation of the machinery at the Perseverance mine and the machinery continued to operate until the night of the 24th of December, when the mine shut down for Christmas Day, and that since said time the plaintiff has been unable to start the machinery at the Perseverance mine with the current provided by the defendant except under orders of the Court requiring the defendants to hold in their circuit-breaker during the momentary starting surge.

Said Finding No. XIV, was objected to by counsel for the defendants on the ground that the same was contrary to the evidence, not supported by sufficient evidence and the finding was immaterial and not within the issues. The matters related to in the finding are especially immaterial, for the reason that

the contract provides that a certain quantity of current shall be furnished and the question of whether such current is made effective or what is done with it in on wise affects the rights of the parties, which said objection was then and there overruled by the Court, to which order and ruling of the Court defendants, by counsel, then and there excepted, which exceptions were allowed by the Court.

No. XV as originally drafted was omitted by the Court when the findings were made, which accounts for the fact that there is no No. XV. [994]

FINDING No. XVI.

The Court further finds that the defendants herein have adopted the practice whenever the said instantaneous circuit-breaker is thrown out, of requiring the plaintiff to notify the defendant corporations at their head office at Treadwell, Alaska, a point about two miles distant from the Sheep Creek power plant and across Gastineau Channel, an arm of the North Pacific Ocean, and that the defendants refuse to allow their electricians at the Sheep Creek power plant to restore the circuit-breaker whenever the same goes out, but require that they be notified at their head office at Treadwell and then send a man across Gastineau Channel to replace the circuit-breaker, and that this practice deprives the plaintiff of an uninterrupted current for periods covering from one to eight hours whenever the said circuit-breaker goes out. The Court finds that at no time since the 6th day of December, 1912, except during the momentary starting surges hereinbefore described, have the defendants furnished the plaintiff with as much as the

300 horse-power provided for in the said contract, and further finds that the defendants have failed to provide the plaintiff with an uninterrupted current of 300 horse-power.

Said finding was objected to by counsel for the defendants on the ground that the same was contrary to the evidence, not supported by sufficient evidence and laws immaterial and not within the issues in the case. That portion of the Court's finding where it finds that the defendant have not since the 6th day of December, 1912, except in the momentary starting surges in the findings referred to, furnished the plaintiff with 300 horse-power provided for in the contract, or have failed to furnish the plaintiff with an uninterrupted current of 300 horse-power is wholly unsupported by the evidence, contrary to the evidence and conflicting with other findings made by the Court. All of which said objections were overruled by the Court, to which order and [995] ruling of the Court defendants, by counsel, excepted, which exceptions were then and there allowed by the Court. [996]

FINDING No. XVII.

The Court further finds that at the time the said contract of October 14, 1909, was executed neither the Oxford Mining Company nor its predecessors in interest had any other power-plant with which to connect the said current of 300 horse-power and that no other plant was in contemplation at that time, and that it was the intention of the defendants to provide for the actual and beneficial use of a current of 300 real horse-power at the power plant of the defendant

corporation, and that from the surrounding circumstances a starting surge was naturally to be implied or presumed, and that without a starting surge (in connection with induction motors, which the Court finds is the ordinary type of motor in mining use, for loads of 300 horse-power or less) the practical and beneficial use of more than 100 horse-power could not have been obtained. The Court further finds that under the conditions existing aforesaid at the time the contract was executed the parties could not have contemplated the uninterrupted delivery of 300 horse-power provided for in the contract unless a starting surge was implied in the said contract."

The defendants objected to said Finding No. XVII, on the grounds that the same is contrary to the evidence, was not supported by sufficient evidence, and that said finding was immaterial and not within the issues. The objection to this finding being more especially that the fact that the first part of the finding relating to the fact that the Court finds that [997] the current to be furnished in the contract was one of real or developed horse-power as distinguished from a current from which 300 horse-power can be developed, such construction is erroneous, and if regarded as a finding based upon extrinsic evidence, is immaterial in view of the fact that the rights of the parties are determined by the terms of the written contract sued upon, which is in evidence, and that part of finding No. XVII which the Court finds from surrounding circumstances that the starting surge was naturally to be implied or presumed, and that without a starting surge in connection with induction

motors, which the Court finds to be the ordinary kind of motor in mining use for loads of 300 horse-power or less the practical and beneficial use of more than 100 horse-power could not have been obtained, was wholly contrary to the evidence, and further is immaterial and not within the issues, since the rights of the parties must be determined from the contract itself, and by that contract the current to be furnished is limited to a current of not to exceed 300 horse-power; and that further portion of the Court's finding in which the Court finds that the parties could not have contemplated the uninterrupted delivery of 300 horse-power provided for in the contract unless a starting surge was implied, is open to the same special objections last mentioned, all of which said objections were then and there overruled by the Court, to which ruling and order of the Court, defendants by counsel then and there excepted, which exception was allowed by the Court. [998]

FINDING No. XVIII.

The Court further finds that an inverse time relay circuit-breaker which will resist ordinary overloads for the period of thirty seconds is the usual, common and proper device for maintaining connections upon lines leaving power-houses, and that such circuit-breaker should be installed upon the switch-board of the defendant companies so as to protect the defendant companies from short circuits, yet provide enough resistance to prevent the circuit between the plaintiff and defendant companies from being broken under ordinary starting surges.

Which said Finding No. XVIII was objected to by defendants on the ground that it is contrary to the evidence, not supported by sufficient evidence and is immaterial and not within the issues.

That said finding is objectionable more especially in that it is immaterial whether or not a time relay circuit-breaker is the proper device under the circumstances related to in the finding, since the contract sued upon does not provide for excessive currents of any duration, but explicitly limits the current to one of not to exceed 300 horse-power; and further, that it is not within the province of the Court to determine what device or machine is proper or not proper, the only question being whether the current furnished complies with the conditions of the contract; each and all of said objections [999] were then and there overruled by the Court, to which ruling and order of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [1000]

[Conclusions of Law Requested by Defendants.]

Thereupon the defendants asked the Court to adopt as its Conclusion of Law the following conclusion of law No. 1, which is in words and figures as follows, to wit:

CONCLUSION OF LAW No. 1.

From the facts found the Court concludes that the defendant companies in making available for the plaintiff's use, an electric current in excess of 56.2 amperes with a voltage of 2300 impressed have complied with each and all of the terms of the contracts

entered into between the parties on their part.

Which said conclusion of law the Court failed to and refused to make or adopt, and the request of the defendants in that behalf was denied, to which ruling and order of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [1001]

Thereupon the defendants requested the Court to make and adopt its said conclusion of law, defendant's conclusion of law No. II as requested, which is in words and figures as follows:

CONCLUSION OF LAW No. II.

The Court further concludes from the facts found that the plaintiff's bill of complaint be dismissed and that the defendants recover their costs and disbursements in this behalf incurred.

Whereupon the Court denied the defendant's request in that behalf and refused to adopt or make defendants' conclusion of law No. II as requested, to which ruling and order of the Court the defendants by counsel then and there excepted, which exception was then and there allowed by the Court.

Thereupon the Court made and entered and adopted its conclusions of law, which are as follows: [1002]

[Conclusions.]

CONCLUSION OF LAW No. I.

That the plaintiff herein is entitled to have the contract, hereinbefore set forth, specifically performed by the defendants and each of them.

Defendants object to conclusion No. I herein on the

grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court and to such ruling of the Court an exception is hereby allowed the defendants. [1003]

CONCLUSION OF LAW No. II.

That the plaintiff herein is entitled to the actual and beneficial use of an uninterrupted current of 300 real horse-power.

Defendants object to conclusion No. II herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case, and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants. [1004]

CONCLUSION OF LAW No. III.

That the plaintiff is entitled to all reasonable surges of power necessary in starting ordinary apparatus used in connection with mining, so that an uninterrupted and normal current of 200 actual horse-power may be continuously used after the starting of such machinery.

Defendants object to conclusion No. III herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants. [1005]

CONCLUSION OF LAW No. IV.

That the contract in question contemplated and referred to the use of real power, and that the connec-

tions of the defendant companies with the transmission line of the plaintiff company be so established as to prevent the breaking of said circuit upon the use of said momentary starting surges, and that the circuit-breakers of the defendant companies be so installed so as to permit reasonable and momentary starting surges.

Defendants object to conclusion No. IV herein on the grounds that it is contrary to the findings; that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants. [1006]

CONCLUSION OF LAW No. V.

That the defendant companies so arrange their connection with the power line of the plaintiff company that in addition to said starting surges the plaintiff company be enabled to draw 300 actual horse-power uninterruptedly in their operations, and that the apparatus and devices installed by the defendants for the purpose of maintaining a circuit with the plaintiff company be set and regulated according to approved wattmeter readings so that the current will not be interrupted except when more than 300 actual horse-power, according to wattmeter readings, is being taken by the plaintiff of the defendant companies.

Defendants object to conclusion No. V herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants. [1007]

CONCLUSION OF LAW No. VI.

That the plaintiff is entitled to have established upon the connection of the plaintiff with the defendant companies at the switch-board at the power plant of the defendant companies situated at Sheep Creek a thirty-second inverse time relay circuit-breaker so as to provide for ordinary overloads necessary to starting surges.

Defendants object to conclusion No. VI herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants. [1008]

BE IT FURTHER REMEMBERED that there-upon the Court made and entered its judgment and decree, which is in words and figures as follows, to wit: [1009]

In the District Court for the District of Alaska, Division No. 1, at Juneau.

No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Decree.

This matter having come on heretofore for hearing and the testimony of the plaintiff and the defendants having been submitted herein taken under advisement, and the Court having made and entered its findings of fact and conclusions of law herein, the parties having at all times appeared by their respective attorneys, Messrs. Shackelford & Bayless and Z. R. Cheney for the plaintiff, and Messrs. Hellenthal & Hellenthal for the defendants, and the Court being fully advised in the premises:

IT IS ORDERED, ADJUDGED AND DECREED:

1. That the plaintiff is entitled to have and receive of and from the defendants under and by virtue of the contract set forth in the plaintiff's complaint the uninterrupted and beneficial use of 300 real or actual horse-power to be supplied by electric current;

2. That the plaintiff is entitled to have and receive of the defendants all reasonable starting surges used in connection with the ordinary machinery used in mining for the application of 300 horse-power or less and necessary to the starting of such machinery and to the beneficial use of an uninterrupted current of 300 horse-power;

3. That the plaintiff is entitled to the use of real and not apparent power, the same to be measured by wattmeter, and that the plaintiff is entitled to use upon the circuit connecting it with the power-house of the defendants any ordinary motors used in mining operations (whether of the induction type or

otherwise) commonly and ordinarily used in mining operations consuming 300 horse-power or less.

IT IS ORDERED, ADJUDGED AND DECREED that the defendants herein so set and maintain their connections, circuit-breakers and other appliances with the plaintiff company that the actual, uninterrupted and beneficial use of the before mentioned rights of the plaintiff shall not in any way be interfered with, and the defendants are enjoined from using any appliances which will deprive the plaintiff of the enjoyment of the rights above decreed to the plaintiff; and defendants are perpetually enjoined from maintaining any circuit-breaker or other appliance which will deprive the plaintiff of 300 actual horse-power, or any part thereof, to be measured by wattmeters or which will deprive [1010] plaintiff of any reasonable starting surges to the enjoyment of the uninterrupted use of the said 300 actual horse-power.

The Court further decrees that the plaintiff be allowed to install upon the switch-board connecting the plaintiff's power line with the defendants' powerhouse a wattmeter, voltameter and ammeter, and that the same be installed in such a way that the plaintiff may have the same under lock and key for its information and inspection to check the wattmeter, voltameter and ammeter readings of the defendant companies at said point.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED in accordance with the foregoing that the contract of October 14, 1909, be specifically performed by the defendants.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants and each of them are hereby enjoined from doing any act or thing which will interfere with the enjoyment of the rights herein decreed to the plaintiff and against the defendants.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants maintain and install upon the connection of the plaintiff's power line with the power-house of the defendants at the switch-board at the power-house at Sheep Creek an inverse thirty-second time relay circuit-breaker in such a manner as to provide reasonable starting surges in connection with the operation of the machinery of the plaintiff company upon said power line, which said circuit-breaker shall be set at all times so as to give an uninterrupted current of 300 real horse-power as distinguished from apparent power, to be set and maintained in addition to the thirty-second resistance in the said circuit-breaker which is decreed for the purpose of providing to the plaintiff reasonable and adequate means of obtaining starting surges without interruption in their operations, and that the plaintiff have and recover of and from the defendants its costs and disbursements herein laid out and expended.

Done in open court this 12th day of June, 1913.

PETER D. OVERFIELD,

Judge. [1011]

BE IT FURTHER REMEMBERED that the defendants thereupon and within the time prescribed

by law filed their motion for new trial, which is in words and figures as follows: [1012]

In the District Court for the Territory of Alaska, Division No. 1, at Juneau.

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Motion for New Trial.

Come now the defendants in the above-entitled cause and respectfully move the Court to grant a new trial, for the reason that the evidence is insufficient to justify the decision, and that it is against the law, for the reason that the Court erred in refusing to receive evidence offered on behalf of the defendants to the fact that the plaintiff had not complied with the contract, to which exception was duly and regularly taken at the time of the trial, and for the further reason that the Court erred in refusing to permit the defendants to amend their answer relative to non-compliance of the contract by the plaintiff, to

which exception was duly and regularly taken by the defendants on the trial.

Dated this 12th day of June, A. D. 1913.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants. [1013]

Which said motion for new trial was then and there overruled by the Court and a new trial herein denied, to which ruling and order of the Court defendants then and there excepted and an exception was then and there allowed the defendants by the Court. [1014]

In the District Court for the Territory of Alaska, Division No. 1, at Juneau.

Case No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Order [Denying Motion for a New Trial].

This matter coming on defendant's motion praying for a new trial in the above-entitled cause, and

1098 *Alaska Treadwell Gold Mining Co. et al.*

the Court, being fully advised in the premises, denies the same.

Ordered this 12th day of June, A. D. 1913.

PETER D. OVERFIELD,

Judge. [1015]

**[Order Allowing Exceptions to Order Denying a
New Trial.]**

*In the District Court for the Territory of Alaska, Di-
vision No. 1, at Juneau.*

No. 968-A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

The motion for a new trial having been filed herein within the time prescribed by law and said motion having been denied by the Court, the defense and each of them accept such ruling and order of the Court in that behalf, the Court does hereby allow the defense and each of them an exception to the order and ruling of the Court denying a new trial herein.

Done this 12th day of June, A. D. 1913.

PETER D. OVERFIELD,

Judge. [1016]

Motion for new trial was denied and the defendants were granted 90 days from and after the date of the judgment and decree to present their bill of exceptions herein. [1017]

And now come the defendants within the time granted them by the Court within which to present and file their bill of exceptions, and present this their bill of exceptions, and ask that the Court make an order allowing and settling the same and directing the same to be made a part of the record hereof. [1018]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Order Settling and Allowing Bill of Exceptions.

This matter coming on to be heard before me, Fred M. Brown, Judge of the above-entitled court,

on the motion of the defendants, the Alaska Treadwell Gold Mining Company, a corporation; Alaska United Gold Mining Company, a corporation; Alaska Mexican Gold Mining Company, a corporation; and Robert A. Kinzie, asking that the above and foregoing bill of exceptions be settled and allowed by the Court, and the Court being fully advised in the premises;

DOES HEREBY SETTLE AND ALLOW the above and foregoing bill of exceptions as a true, accurate, full and complete bill of exceptions herein, and the Court does hereby certify that all the evidence adduced at the trial by each and all of the parties hereto is fully and accurately set out in the above and foregoing bill of exceptions, and that said bill of exceptions contains all the evidence adduced at the trial, as well as the orders, rulings and proceedings had therein, all of which was fully and accurately set out in said bill of exceptions. [1019]

And IT IS FURTHER ORDERED that said bill of exceptions so containing all the evidence, orders and proceedings had and the whole and each and every part thereof be settled and allowed and made a part of the record in this case; and the Court further certifies that the bill of exceptions so settled and allowed was presented to it within the time prescribed by law and the rules of this Court and within the time allowed by this Court by an order made and entered for that purpose.

Done in open court this 9th day of August, A. D. 1913.

FRED M. BROWN,
Judge.

[Endorsed]: No. 968—A. In the District Court for the Territory of Alaska, Division No. 1. Alaska Gastineau Mining Company, Plaintiff, vs. Alaska Treadwell Gold Mining Company et al., Defendant. Bill of Exceptions. Hellenthal & Hellenthal, Attorneys for Defendants. Office: Juneau, Alaska. Filed in the District Court, District of Alaska, First Division. Aug. 9, 1913. E. W. Pettit, Clerk. [1020]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY, a Corporation,

Appellee.

Petition for an Appeal.

The above-named Alaska Treadwell Gold Mining Company, a corporation; Alaska United Gold Mining Company, a corporation; Alaska Mexican Gold Mining Company, a corporation; and Robert A. Kinzie, appellants herein, each and all conceiving themselves aggrieved by the decree and judgment

rendered herein on the 12th day of June, 1913, which said decree and judgment were signed and entered by the Honorable Peter D. Overfield, Judge of the above-entitled court, on the date above mentioned, and were rendered in favor of the Alaska Gastineau Mining Company, a corporation, and against the Alaska Treadwell Gold Mining Company, a corporation, Alaska United Gold Mining Company, a corporation, Alaska Mexican Gold Mining Company, a corporation, and Robert A. Kinzie, do each and all hereby appeal from said judgment and decree to the United States Circuit Court of Appeals for the Ninth Circuit, and they and each of them pray that this their appeal may be allowed, [1021] and that a transcript of the record and proceedings and papers upon which said judgment and decree was made duly authenticated may be sent to the United States Circuit Court of Appeals for the Ninth Circuit; and that the above-named appellants and each of them do further pray that they may be allowed an appeal from said judgment and decree and from the whole and every part thereof to the said United States Circuit Court of Appeals for the Ninth Circuit as prayed for; and appellants further pray that they may be given a supersedeas herein in order that the decree complained of may not be enforced against them, or either or any of them, until the errors herein complained of can be reviewed by the

said United States Circuit Court of Appeals for the Ninth Circuit.

J. A. HELLENTHAL,
S. HELLENTHAL,

HELLENTHAL & HELLENTHAL,
Attorneys for the Appellants, Alaska Treadwell Gold Mining Company, a Corporation, Alaska United Gold Mining Company, a Corporation, Alaska Mexican Gold Mining Company, a Corporation, and Robert A. Kinzie.

And now, to wit, on the 8th day of August, 1913, it is ordered that the appeal herein be allowed as above prayed for.

FRED M. BROWN,
Judge.

Entered Court Journal No. 1, page 118.

Due service by copy of the within admitted this 7th day of August, 1913.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,

Attorneys for Defendant.

Original. No. ——. In the District Court for the Territory of Alaska, Division No. 1. Alaska Treadwell Gold Mining Company, a Corporation, et al., Appellants, vs. Alaska Gastineau Mining Company, a Corporation, Appellee. Petition for an Appeal. Hellenthal & Hellenthal, Attorneys for Appellants. Office: Juneau, Alaska. Filed in the District Court, District of Alaska, First Division. Aug. 8, 1913. E. W. Pettit, Clerk. By H. Malone, Deputy. [1022]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT
A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Appellee.

Assignment of Errors.

Come now the Alaska Treadwell Gold Mining Company, a corporation, Alaska United Gold Mining Company, a corporation, Alaska Mexican Gold Mining Company, a corporation, and Robert A. Kinzie, the appellants herein, and assign the following errors made by the trial court, as the errors upon which the said appellants will rely for a reversal of the decree rendered herein.

I.

The District Court for the District of Alaska, Division Number One, erred in overruling the defendant's demurrer to the plaintiff's complaint, which said demurrer was in words and figures as follows:
[1023]

*“In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT
A. KINZIE,

Defendants.

Demurrer.

Come now the defendants and each of them and demur to the complaint of the plaintiff herein for the reasons:

First—That the complaint does not state facts sufficient to constitute a cause of action against said defendants or against either or any of them;

Second—That the Court has no jurisdiction to grant the relief demanded;

Third—That no facts are set up in the complaint under which a court of equity would have jurisdiction to grant the relief asked for or any relief whatsoever against any one or more of the defendants; and

Further that it appears upon the face of the complaint itself that the plaintiff has a plain, speedy

and adequate remedy at law.

HELLENTHAL & HELLENTHAL,

Attorneys for all the Defendants."

II.

The District Court for the District of Alaska, Division Number One, erred in permitting the witness Shackleford to testify to the negotiations had between him, as the representative of the predecessors in interest of the appellee, and Mr. Bradley, as the representative of the appellant companies, as well as to the agreements had between the parties, for the reason that the contract [1024] sued upon was in writing, and all the negotiations had and agreements had prior to the execution of this contract had merged into the written contract, and testimony relative to such negotiations and agreements was irrelevant, incompetent and immaterial. The question asked the witness Shackleford reads as follows: "Well, what negotiations did you have with Mr. Bradley about that time?" To this question appellants objected on the ground that whatever negotiations were had was incompetent, irrelevant and immaterial, because such negotiations had all been merged into the written contract, and the written contract was the contract before the court, which objection was then and there overruled by the Court, and the appellants were then and there give an exception to such ruling and order of the Court.

It was then and there understood between the Court and counsel and the parties that any and all testimony bearing upon agreements or negotiations

had between the parties outside of the written contract sued upon would go in under the objection of appellants as being irrelevant, incompetent and immaterial, and that the matters referred to had all merged into the written contract, and that the Court having overruled said objection would grant appellants an exception to such order and ruling; whereupon the witness Shackelford testified as follows:

“A. (By the WITNESS.) In the early part of August, 1909, Mr. Bradley came to my office and stated that they would like to acquire what is known as the lower water right and power plant and millsites on Sheep Creek. That plant was in a state where it could be used, but it hadn't been in use for two or three years. The title to the Sheep Creek mines having been in dispute, and after some discussion I informed him that I didn't think he was prepared, from his offers, to pay a price that would be attractive to the owners of the property, [1025] and he finally outlined an agreement which he called—I have forgotten the exact term. It is a—

Q. (By Mr. BAYLESS.) Flood water contract?

A. —flood water agreement, and it was practically in the form that it is now.

Q. (By the COURT.) At what time was that?

A. That was in the month of August, 1909. So, within two or three days, some time prior to the 10th of August, his representations at

that time was that he was willing to insure to the International Trust Company and the parties interested in that property or in the Sheep Creek mines sufficient power to operate the Sheep Creek mines, and I told him that I thought a contract along that line giving adequate power for the operation of the mine might meet with the approval of the Boston bondholders and of the trust company. He estimated that we would need at least 150 horsepower to operate the mines with; that was not to start the machinery, but to operate the mines with, and he said that he thought 200 horsepower would be a liberal estimate for the power continuously required in the operation of the mine. The contract was a draft of our ideas about the matter.

A. (By the WITNESS.) A draft of our ideas about the matter so far as we had gotten, involving a lease during the period of the construction and an option to take the horse-power and an option in the case we didn't at the end of ten years take the horse-power, was drawn up and various alterations in it were made.

Q. (By the COURT.) Who drew up the option?

A. I drew a skeleton of the option, and after that time the option was either drawn or dictated by Mr. Bradley or Mr. Taylor. The option probably will be—the original draft is probably in my handwriting very largely, as both the gentlemen suggested alterations and changes

I would note them. The option or the contract, I should say, wasn't signed by either of the parties at that time. It was simply a draft for submission in Boston.

Q. Drawn up where originally?

A. Drawn up here in Juneau and at Treadwell—after it was completed, I will say that the last clause in the option defining an uninterrupted current was drawn by me. I originally used the word 'continuous' instead of 'uninterrupted,' and it stood in the contract, I think, until we got on a boat. We went down below together. At that time it was changed to the word 'uninterrupted' at Mr. Taylor's suggestion because he said continuous had a meaning in electricity which might [1026] require them to deliver a direct—at any rate that word was changed. However, when the contract was completed, Mr. Bradley wrote a letter to Mr. Henry Endicott, who was the most influential bondholder in the—under the mortgage deed of trust, held by the International Trust Company and who represented most of the other bondholders, and I took that letter with me and a draft of the contract. The original of that letter is in Boston. I have a copy, however, which I have examined and which I know to be a correct copy, and I will present the letter in connection with my testimony.

A. (By the WITNESS.)—Upon my arrival in Boston I presented to them the draft of the contract and the matter was discussed between

the three principal bondholders and myself, Mr. Henry Endicott, Mr. William Endicott and Mr. Wallace Hackett,—and they asked me if I considered 200 horse-power adequate, and I told them that was a subject upon which I declined to advise them, because I had no technical knowledge of the requirements of the plant. I could tell them there was a thirty stamp-mill there and about the machinery that was there. At that time Mr. Thane was in Boston, and they took the matter up with him and asked him.

Q. (By Mr. BAYLESS.) I will ask you, Mr. Shackelford, if the conversation in Boston and negotiations there—you had with the Endicotts and Wallace Hackett was afterwards made known to the Treadwell Company?

A. I don't think the details of them were. The result of Mr. Thane's advice was made known to Bradley.

Q. (By the COURT.) Made known to Treadwell? A. To Mr. Bradley.

A. (By the WITNESS.) All, I may say on the subject is simply this, that after consulting with Mr. Thane he advised them that they would require 300 horse-power in continuous use to operate that mine. Thereupon Mr. Henry Endicott sent a wire to Mr. Bradley, at Wardner, Idaho, a copy of which I present for identification and ask to be offered.

Q. (By the COURT.) You were present at the time that Thane discussed this matter with Endicott and Hackett? A. Yes, sir.

A. (By the WITNESS.) Two or three days afterwards—the exact date I haven't, and the exact date of Mr. Bradley's telegram I haven't, but I have a copy of — of both of the telegrams —Mr. Endicott received the following telegram from Mr. Bradley. [1027]

A. (By the WITNESS.) Thereupon there was no—there was nothing done for several days until Mr. Bradley's wire was received. Shortly after that Mr. Hackett and I proceeded with the organization of the Oxford Mining Company and the property theretofore held in trust by the International Trust Company was deeded to the Oxford Mining Company as soon as the president of the Trust Company returned from Europe as *as* soon as this was done the contract, as drafted or submitted by Mr. Bradley with his letter in August, was signed exactly as drafted and submitted except wherever the words two hundred horse-power had appeared in the contract originally the words three hundred horse-power were substituted.

Q. (By Mr. BAYLESS.) During all these negotiations was anything said by either of the parties with reference to a starting surge?

A. No; nothing was said at all. I had no knowledge whatever of the necessity of a starting surge. I didn't suggest it; didn't discuss it. The estimates that were made of the amount of power that we would require by Mr. Bradley at the time the contract was drawn was based on the actual need of the mine and not upon any

starting surge, as discussed here, and it wasn't until after August, 1910—after we had elected to take the current that any statement was made to me or anybody with my knowledge concerning the fact that the starting surge was necessary or that the contract meant anything else in practical and effectual terms than three hundred horse-power.

Q. Nothing was said about a peak load?

A. Nothing was said about a peak load by any of the parties until after we had elected to take the current.

Q. And Mr. Bradley and Mr. Taylor practically drafted the contract as afterwards signed?

A. It was drafted as their proposition. They didn't sign it—they drafted it and then enclosed it in this letter from Mr. Bradley which has been presented. As soon as the Oxford Company signed the contract it was sent to San Francisco and signed there.

Q. And the only change that the Oxford Company put in to Mr. Bradley's contract was three hundred horse-power where Mr. Bradley had two hundred? A. That is it.

Q. And it was the representations of Mr. Bradley upon which the Oxford Company, Wallace Hackett and the Endicotts relied? [1028]

A. Yes; this correspondence was presented to them and from the discussions had at the time I know that they assumed that they would have an effectual power at their disposal of the amount named in the contract."

That all and singular the above and foregoing evidence was received by the Court over the objection of counsel that the same was irrelevant, incompetent and immaterial, that the matters referred to and the agreements testified to had all merged into the written contract which was before the Court, that no testimony could be received to vary, modify or explain the terms of that contract; which objection was overruled by the Court, and counsel was then and there given an exception to such ruling and order of the Court.

III.

The District Court for the District of Alaska, Division Number One, erred in permitting the witness Thane to testify, over the objection of counsel, that the testimony was irrelevant, incompetent and immaterial, and that the contracts between the parties had been merged into a written contract, and that no testimony could be received to vary, modify or explain the terms of that contract.

“Q. I will ask you if your advice on the requirements in the way of horse-power was requested at that time with reference to the amount of horse-power that would be necessary to the operation at Sheep Creek?

A. It was.

Q. You were more or less familiar with the general equipment at Sheep Creek?

A. I was. [1029]

Q. I will ask you if you advised them as to the amount of horse-power that would probably be required there for the operation of the mine.

A. I did.

Q. What amount does it—?

A. (By the WITNESS.) May I answer the question?

COURT.—Answer the question.

A. I advised them 300 horse-power.

Q. (By Mr. SHACKLEFORD.) Was that advice based on any estimate whatever as to the necessity of starting surges?

A. It was not.”

All of the above and foregoing testimony was received over the objection of counsel for the appellants, that the same were incompetent, irrelevant and immaterial, and no parol testimony could be received to vary, modify or explain the terms of the written contract, which objection was overruled by the Court, to which ruling and order of the Court counsel then and there excepted, which exception was then and there allowed by the Court.

IV.

The District Court for the District of Alaska, Division Number One, erred in permitting the witness Wallenberg, over the objection of counsel for the appellants to testify as follows:

“Q. Now, then, I will ask you, Mr. Wollenberg, have you made any inquiry to find out the power consumed at Sheep Creek prior to the fall of 1909—have you that data with you?

A. Yes.

Q. In 1909, at the time this contract was entered into? [1030]

Objection being made this question, counsel

for appellee stated the purpose of the testimony sought to be elicited to be as follows:

Mr. SHACKLEFORD.—If the Court please, we desire to prove at this time that the power consumption referred to in the letter of Mr. Bradley was subject—that a surge was necessarily implied in the offer to contract from the surrounding circumstances.”

The following objection was then and there made to the testimony and to the question asked: That the same is objected to that the testimony was incompetent, irrelevant and immaterial; that it is immaterial what representations Mr. Bradley made or did not make, since the action was not one brought to set aside the contract for false representations, for fraud; that the action, on the other hand, was one brought on the contract itself to enforce it, and that the construction of the contract would necessarily depend upon the terms of the contract itself. This objection was then and there overruled by the Court and an exception was then and there allowed the appellants to such ruling and order of the Court.

The witness then testified as follows:

“Q. (By Mr. SHACKLEFORD.) Now, just go ahead, Mr. Wollenberg, and state to the Court—

A. Why, I made an investigation of the condition of the mine prior to that time and what equipment at that time, prior to that time and find it to be as follows: There was at the beach power-house which is located at or near the site

of the present Sheep Creek plant, a compressor—

A. There was at the beach a single cylinder compressor driven by a water-wheel of approximate size 14 inches by eighteen inches, which operated at one hundred revolutions per minute [1031] and which, if the compressor called for one hundred pounds' pressure per square inch would consume one hundred horse-power. There was in addition to that a displacing compressor of approximate sized cylinder eighteen inch diameter by eighteen inch stroke which, running at one hundred revolutions per minute and compressing air under one hundred pounds to the square inch would consume one hundred and sixty-five horse-power. There was also an eighty horse-power multipolar Westinghouse generator which would consume something more than its rated output of eighty horse-power, at least eighty horse-power, in operating at normal conditions. There was also a generator of twenty-five horse-power. The total of this installed equipment was 380 horse-power.

Q. That includes the stamp-mill?

A. That is the installation of the particular units either for producing electrical energy or for compressed air at the beach power-house; and the operations of the mine at that time involved the running of a 30 stamp mill, which would require between 50 and 60 horse-power; two rock-crushers, which would require 25 horse-power; lights at various points of the camp, re-

quiring 10 horse-power; and electric hoist in the mine requiring 15; two pumps requiring at least 10, and two air hoists requiring about 25. In addition to this, the entire output of air from the compressor itself at the beach was used in operating rock drills, except, of course, the air which leaked through the pipe-line on the way to the beach from the mine. Assuming, however, that there was a large leakage and that at least five drills were necessary to the operation of the mine for the supply of its 30 stamp mill and necessary development work we would have 75 horse-power for drills. The total of these figures is 260 horse-power.

Q. That is the total consumption?

A. Accounted for.

Q. Probable total consumption from that equipment?

A. Exclusive of the line loss, that is in the air loss.

Q. (By Mr. J. HELLENTHAL.) Be how much?

A. Two hundred and sixty horse-power.

Q. (By Mr. SHACKLEFORD.) That air line—that the present air line is on the property there?

A. Well, part of it there is on the property.

Q. Not in use though?

A. It is dismantled. [1032]

Q. The compressor has been moved up—there is a new compressor installed right at the mouth of the tunnel?

A. By our company, yes.

Q. Now, assuming that the power consumption at the Sheep Creek mines in October, 1909, at the time this contract was executed, with a starting load, could that property have been operated on two hundred horse-power without considering the fact that the Treadwell Company was not going to give a starting surge?

A. Repeat the question, please.

Q. Well, assuming for the moment that it was the intention of Mr. Bradley not to give a starting surge upon the current which he proposed to give to the plaintiff company or to its compressor, could that property have either been operated or started on the two hundred horse-power provided for in the contract at the time it was drawn?

A. Well, it depends on—you would apply that two hundred horse-power to the same machines that were then in use?

Q. Yes—I am assuming—I am assuming that the plant would necessarily be reconstructed because of the change in the compressor, the ground upon which the compressor having been—on which the compressor was situated having been given over to the defendant companies?

A. Well, the compressor they had in—the large one of the two, is comparable in size with the one which we are now endeavoring to start from this current and certainly would not have been started if arranged as our compressor is

now arranged, that is driven in that way.

Q. Could it have been started with two hundred horse-power without a reasonable surge?

A. Not if installed with a motor as this one is."

All of which said evidence was received by the Court over the objection by counsel above stated, and the appellants were given an exception to the order and ruling of the Court overruling said objection.
[1033]

V.

The District Court for the District of Alaska, Division Number One, erred in permitting the witness Bishop to testify, over the objection of counsel for the appellants, as follows:

"Q. Mr. Bishop, were you in charge of the Sheep Creek power plant prior to its reconstruction, with the Treadwell Company at any time?

A. I was in charge at the time it was closed down. I don't remember what year. It was six or seven years ago.

Q. You have—you know what machinery was in that power plant and what was in the Sheep Creek mine?

A. Yes.

Q. (By Mr. SHACKLEFORD.) All right, Mr Bishop, just give the machinery?

A. In the power-house?

Q. Yes, state whether in the power-house and go all over the property?

A. In the power-house at the beach there was one straight line compressor, 14-inch cylinder

in diameter and 18-inch stroke, I think—I would not be positive about the 18-inch stroke, whether 16 or 18—and there was one duplex compressor, the diameter of the cylinders were 16, and my recollection is that the stroke was also 16; and there was one 80 horse-power Westinghouse direct current 500 volt electric generator; and at one time they had a 25 horse-power direct current generator of the Sprague type, 500 volts.

Q. That is what was known as the lower power plant at Sheep Creek?

A. That was on the beach?

Q. There was another power plant up above where the intake of the lower power plant was, wasn't there?

A. Yes.

Q. Do you recollect approximately what the capacity of that plant was? [1034]

A. Well, there was installed in it a 75 horse-power Sprague generator and 75 horse-power C. & C. although they never both operated at the same time.

Q. Now, going up on the creek, what machinery was there in operation at the Sheep Creek mine?

A. At the mine?

Q. At the mill—start in the mill and going on up to the mine.

A. Well, in the mill there was one 50 horse-power C. & C. direct current 500 volt motor and

one Sprague 50 horse-power, same voltage, direct current.

Q. Beside your motor, what was there?

A. And there was a 25 horse-power motor which ran the rock-crusher in the top of the mill, and that was all of the machinery in the mill excepting a water wheel which ran the vanners.

Q. Now, outside of the motor, the generators of the motor described, what was there for this power to operate—there was a mill—what was the capacity of the mill?

A. 30 stamps in the mill.

Q. How many rock-crushers?

A. Two.

Q. How many lights, approximately, Mr. Bishop?

A. O, I suppose there was probably one hundred.

Q. What about the mining operations, what was operated in the mine proper—was there anything else in the mill besides the rock-crusher, the lights and the stamp mill?

A. Nothing.

Q. Well, now, at the mine, what was it operated by—power?

A. At the mine they used air drills, and they had two hoists which used air; they were—one was a double cylinder hoist and one was a single play—small one was a timber hoist, I believe, used only for hoisting timber; the other for hoisting the bucket. That weighed, I think,

about 500 pounds, that is, carried 500 pounds of ore.

Q. How much power was necessary to run that beach compressor—how much power would it take, approximately, Mr. Bishop? [1035]

A. Well, I don't know—I don't know that I ever calculated the hoist-power on it. I should judge that it probably took something like 150 horse-power. It was a 3-inch nozzle, usually I think it was about 3 inches, might be fraction of an inch more or less on the pipe.

Q. What was the head?

A. 270 feet."

All of which said evidence above referred to was received over the objection of counsel same as irrelevant, incompetent and immaterial, that the action was upon a written contract not ambiguous in its terms where parol evidence cannot be received to vary, modify or explain the terms of said contract in writing, which objection was overruled by the Court and appellants given an exception to said order and ruling of the Court.

VI.

The District Court for the District of Alaska, Division Number One, erred in not permitting the witness Proebstel, after said witness had qualified as an expert and as an electrical engineer, to testify as to what is meant in electrical engineering by "a current of not to exceed 300 horse-power"; the witness having been asked the following question:

"Q. What is the meaning of the term 'current not to exceed 300 horse-power?' "

This question was objected to on the ground that the language of the contract was one of law for the Court; counsel [1036] for appellants then offered to prove by this witness the technical meaning of the terms embraced within the phrase "current of not to exceed 300 horse-power." The Court sustained the objection to the testimony offered, to which ruling and order of the Court counsel then and there excepted and an exception thereto was then and there allowed.

VII.

The District Court for the District of Alaska, Division Number One, erred in not permitting the witness Kinzie to testify in relation to the question of whether the appellee or its predecessors in interest had complied with the terms of the contract sued upon on their part, which refusal to so permit the witness Kinzie to testify, an exception was duly allowed by the Court; in this connection the Court further erred in not permitting the appellants to amend their answer by more definitely pleading a noncompliance with the terms of the contract on the part of the appellee. [1037]

VIII.

The District Court for the District of Alaska, Division Number One, erred in making Finding Number III, which is in words and figures as follows: [1038]

FINDING III.

That on and prior to the month of August, 1909, the International Trust Company was a corporation and in possession and control for the benefit of its

bondholders of a certain water power plant at the mouth of Sheep Creek near Juneau, in the District of Alaska, which said water power plant is more fully described in the agreement between the Oxford Mining Company, a corporation, and the defendant corporations, above named, dated October 14, 1909, which is hereinafter set forth. That the said water-power plant at and prior to said time had an installed generating equipment of 370 horse-power, and that the said water-power plant had been used for the purpose of furnishing power to what is known as the Sheep Creek Mines, which was claimed by the International Trust Company and its bondholders, and that the operation of the said mine required not less than 260 actual horse-power in uninterrupted use for its continuous operation, exclusive of any additional surges of power necessary to start the operation of the said mine and mining machinery therein installed.

And which said finding was made by the Court over the objection of the defendants that the same was contrary to the evidence, not supported by the evidence, and the finding was not within the issues in that the evidence did not show that the International Trust Company was possessed at the time referred to, or any other time, of the water-power plant, in said finding referred to, nor that said water-power plant, or any water-power plant, owned by said International Trust Company was possessed of a generating capacity or equipment of 370 horse-power, nor did the evidence show that the said International Trust Company or its bondholders claimed, at that

time, or any other time, the Sheep Creek Mines, nor did the evidence prove or tend to prove that said mine required not less than 260 actual horse-power for the operation, but the evidence, on the contrary, conclusively shows that said mine could be operated with 150 horse-power. And said finding in the whole and every part thereof relates to matters that are immaterial in this case, in that the rights of the parties depend upon a certain contract which is in [1039] writing and must rest and be determined by the terms of that contract which cannot be varied or modified by extrinsic facts, circumstances or agreements. All of which objections were by the Court overruled and to such ruling and order of the Court counsel for defendants then and there excepted, which exception was allowed by the Court. [1040]

IX.

The District Court for the District of Alaska, Division Number One, further erred in making its Finding No. IV, which is in words and figures as follows: [1041]

FINDING IV.

That prior to the month of August, 1909, the said power-plant had actually been used by the International Trust Company and its predecessors in interest for the purpose of and in connection with the generation of power for the operation of the said Sheep Creek mines, which said mines were provided with railways, trams, compressors, lighting plant, two rock-crushers, one 30-stamp mill, two hoists and other ordinary appliances used in connection with the operation of a mine.

Defendants objected to the making of Finding No. IV on the ground that it was contrary to the evidence, not supported by sufficient evidence, and not within the issues, more expressly so for the reasons following, that the rights of the parties depend upon the construction and terms of a certain written contract sued upon, and that all the matters and things referred to in the finding are immaterial and outside of the issues, in that the said contract or contracts cannot be varied, modified or explained by extrinsic facts, which said objection, and each of them, were then and there overruled by the Court, to which ruling and order of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court.

X.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. V, which is in words and figures as follows: [1042]

FINDING V.

That on and prior to August, 1909, the International Trust Company was not only in possession and control of the said Sheep Creek power-plant, but was also in possession and control of mines near Juneau, Alaska, known as Silver Bow Basin Mines, including the Ground Hog group of mines, and also claimed equitable title to the Sheep Creek group of mines before mentioned, which said latter group the said power-plant had theretofore been used to operate.

That the defendants object to making of said Finding No. V, on the ground that it was contrary to the evidence and not supported by sufficient evidence,

and that the finding was not within the issue, for the special reason, among others, that the rights of the parties must be determined in accordance with a written contract sued upon which cannot be varied, modified or explained by extrinsic facts or circumstances, or by any of the matters or things related to in said findings, which objection was then and there overruled by the Court, to which order and ruling of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court.

XI.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. VI, which is in words and figures as follows: [1043]

That in the month of August, 1909, F. W. Bradley approached L. P. Shackelford, the attorney for the International Trust Company, and also attorney for the defendant companies herein, and stated that it was the desire of the defendant corporations to secure possession and control of the said Sheep Creek power-plant and construct upon the mill sites, upon which said power-plant was situated, a water-power plant of substantial size and efficiency of a producing capacity of about 3,000 horse-power, and that it was the desire of the defendant corporation upon the construction of such power-plant to provide that the said International Trust Company or its successors have sufficient power to operate the mines claimed by the International Trust Company known as the Sheep Creek mines and accept in exchange a deed for the Sheep Creek power-plant. That at said time the

said F. W. Bradley was consulting engineer of the defendant companies and had full charge of their operations, constructions and development, with full authority to represent the said companies, and with him at that time was H. H. Taylor, the then president of the defendant companies, who concurred in the representations of said F. W. Bradley. That the said F. W. Bradley at said time represented that an uninterrupted current of 200 horse-power continuously at the disposition of the said International Trust Company, or its assigns, would operate the Sheep Creek mines, and that said statement referred to the ordinary electric load necessary to the operation of the mines and the mining machinery appurtenant thereto, and did not include an estimate of the amount of power momentarily necessary to start machinery that would uninterruptedly consume or use 200 horse-power. That thereupon a draft of a contract between the defendants herein and a company to be organized by the International Trust Company was drawn at Juneau, Alaska, upon the dictation and approval of the said F. W. Bradley, and the defendant companies for presentation to the International Trust Company and its bondholders, which said draft was in words and figures identical with the contract of [1044] October 14, 1909, between the Oxford Mining Company and the defendant companies, hereinafter set forth, except that where the words "three hundred horse-power" appear in the body of the said contract of October 14, 1909, the words "two hundred horse-power" originally appeared in the body of said contract, and that after

the said draft of the said contract had been made said F. W. Bradley wrote a letter to Henry Endicott, the principal bondholder interested in the said power-plant, in words and figures as follows, to wit:

“Treadwell, Alaska, August 10, 1909.

Henry Endicott, Esq.,

101 Tremont Street,

Boston, Mass.

Dear Sir:

We have been talking to Mr. L. P. Shackelford about your water right on Sheep Creek in this district and both *me* and ourselves have agreed upon what we consider an extremely fair proposition our concession have been drawn up in the shape of a document which Mr. Shackelford will present to you as it is now this sheep creek water power is in jeopardy and can be taken at any time by adverse interests our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you are holding this water right for the value that it has had and may have in the future for working the sheep creek mines and thirty stamp mill connected therewith estimating conservatively 150 HP is all the power these mines and mills ever required for their past operations. The mill is amply large enough for the mine and surely two hundred H. P. will more than take care of future requirements if the proposition is all acceptable to you we would begin immediate work thereby preserving your rights and returning you some monthly income the proposition pro-

vides ample time in which you could decide either to sell the property outright or take two hundred H. P. for the operation of the mines and mill, yours very truly,

F. W. BRADLEY."

At the request of said F. W. Bradley the said L. P. Shackleford departed for Boston to present the said draft of agreement to the said Henry Endicott and the International Trust Company.

Defendants objected to making of said Finding No. VI, on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that finding was not within the issues, for the following reason, among others, that the contract sued upon is in writing, that the negotiations, agreements and understandings had between the parties prior to its execution are immaterial, that the terms of the contract cannot be varied, explained or modified by extrinsic [1045] evidence or by facts or circumstances referred to in the Court's findings, all of which objections were then and there overruled by the Court, to which order and ruling of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court.

XII.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. VII, which is in words and figures as follows: [1046]

FINDING No. VII.

That upon the presentation of the said draft of agreement by the said L. P. Shackleford, the parties

interested in the said power-plant made an investigation as to the amount of power actually needed by them in continuous operation, exclusive of the amount necessary for any momentary starting surges for their machinery, which matter of surges was not discussed between the parties to the contract, and ascertained that they would need the continuous use of 300 horse-power, and accordingly the said Henry Endicott sent to the said F. W. Bradley the following telegram:

“Boston, August 23, 1909.

F. W. Bradley,

Wardner, Idaho.

Will lease power on terms proposed subject to consent trust company if three hundred horse power is substituted for two hundred.

HENRY ENDICOTT.”

And received in reply thereto from the said F. W. Bradley the following telegram:

“Henry Endicott:

You may substitute three hundred for two hundred horse power may I cable Sup’t Kinzie to begin immediate protection measure.

F. W. BRADLEY.”

Thereafter the said International Trust Company and the bondholders beneficially interested in the said property transferred the said property to the said Oxford Mining Company and caused the said Oxford Mining Company to make and execute an agreement with the defendants, above named, which said agreement was also made and executed by the defendants, which said agreement was and is in the fol-

lowing words and figures, to wit: [1047]

THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between OXFORD MINING COMPANY hereinafter called the lessor and the Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company hereinafter called the lessees.

WITNESSETH.—First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to wit:

The Mexico Mill-site U. S. Mineral Entry No. 25, lot 71B. The Bellvidere Mill-site U. S. Mineral Entry No. 25, lot 72B. The Jumbo Mill-site U. S. Mineral Entry No. 60, lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 Jumbo Mill-site U. S. Survey No. 260 on the meander line of Gastineau Channel, thence first course along the meander line of Gastineau Channel at ordinary high water mark N. 52.00' W. 54 feet to stake No. 2; thence second course N. 48 15' E. 200 feet to stake No. 3; thence S. 52.00' E. 54 feet to the N. W. side line of Jumbo Mill-site, U. S. Survey No. 260 to stake No. 4; thence S. 46 15' West along the Northwest side line Jumbo Mill-site U. S. Survey No. 260, 200 feet to stake No. 1, the place of the beginning containing an area of one quarter of an acre more or less courses expressed from the true meridian, Mag. Var. 29. 30'; and also that certain water right known as the Sheep Creek Water Right

and located on Sheep Creek about three-quarters of a mile from its mouth, together with the flume and pipe line connecting the same with the beach near the mill at the mouth of the said Sheep Creek; also the saw-mill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, waterwheels, and all other machinery and appliances used in connection with said saw-mill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property [1048] for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-five (\$125.00) Dollars per month, payable in gold coin of the United States on the first day of each month during the term of said lease at the office of the lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified, and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

It is the intention of the lessees to erect, equip and maintain upon said premises a water-power plant of

substantial size and efficiency for the generation of electric power, and if at any time after two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the party of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor [1049] by paying to the lessor the sum of Twenty-five Thousand Dollars (\$25,000.) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-five Thousand Dollars (\$25,000.) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) and one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor to both of which the lessor now asserts only possessory titles. The lessees may at their own

cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them they shall become the property of the lessor and remain covered by this lease and subject to all terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so, that any successor or successors in interest to the lessor and or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein described be conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased *by* placed in escrow so as to ensure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or lessees then the property and rights herein described with all the improvements that are or that may hereafter be placed on the said premises shall be and become the property of the lessor. [1050]

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that

may arise from operating and physical causes beyond its control.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first above written. (Executed in triplicate.)

Witness:

HAROLD LAWRENCE.

WALTER W. BLACK.

OXFORD MINING COMPANY.

By WALLACE HACKETT,
President.

And HENRY ENDICOTT,
Treasurer.

[Seal Oxford Mining Company.]

ALASKA TREADWELL GOLD MINING
COMPANY.

By H. H. TAYLOR,
President.

F. A. HAMMERSMITH,
Secretary.

ALASKA MEXICAN GOLD MINING
COMPANY.

By H. H. TAYLOR,
President.

F. A. HAMMERSMITH,
Secretary.

ALASKA UNITED GOLD MINING COM-
PANY.

By H. H. TAYLOR,

President.

F. A. HAMMERSMITH,

Secretary.

[Seal Alaska Treadwell Gold Mining Company.]

[Seal Alaska Mexican Gold Mining Company.]

[Seal Alaska United Gold Mining Company.]

COMMONWEALTH OF MASSACHUSETTS,
COUNTY OF SUFFOLK,
CITY OF BOSTON,—ss.

Be it remembered that on this 14th day of October, 1909, before me, the undersigned, a Notary Public, in and for said County and State, personally appeared Wallace Hackett, President, and Henry Endicott, Treasurer, of the Oxford Mining Company, a corporation organized [1051] under the laws of the State of Maine, to me known to be the individuals described in and who executed the foregoing instrument as such President and Treasurer and said Henry Endicott having affixed the seal of said corporation to said instrument, they severally acknowledged to me that he Wallace Hackett, as President, and he, Henry Endicott, as Treasurer of said Corporation executed the foregoing instrument for and on behalf of said Corporation, as the free and voluntary act of said Corporation for the uses and purposes therein set forth. Then the said Henry Endicott being by me first duly sworn, on his oath states that he is the Treasurer of said Corporation, is acquainted and is the custodian, and has in his pos-

session the corporate seal of said Corporation and that the seal hereinbefore affixed is the corporate seal of said Corporation and was affixed by him as such Treasurer by order of the Board of Directors of said Corporation.

IN WITNESS WHEREOF I have hereunto set my hand and seal the date and year first above written.

[Notarial Seal] (Signed) LLOYD A. FROST,
Notary Public.

My Commission expires Dec. 5th, 1913.

STATE OF CALIFORNIA,
CITY AND COUNTY OF SAN FRANCISCO,—ss.

On the 12th day of November in the year one thousand nine hundred and nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary respectively of Alaska Mexican Gold Mining Company and Alaska United Gold Mining Company, the corporations that executed the within *in* foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporations therein named, and they acknowledged to me that such corporations executed the same. [1052]

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in the said City and County of San Francisco, the day

and year last above written.

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of San
Francisco, State of California.

State of California,
City and County of San Francisco,—ss.

On this 12th day of November in the year One Thousand Nine Hundred and Nine, before me, P. J. Kennedy, a Notary Public, in and for said City and County, residing therein, duly commissioned and sworn, personally appeared H. H. Taylor and F. A. Hammersmith, known to me to be the President and Secretary, respectively, of Alaska Treadwell Gold Mining Company, the Corporation that executed the within and foregoing instrument, and to be the officers who executed the said instrument on behalf of said Corporation therein named, and they acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal at my office in said City and County of San Francisco, the day and year last above written.

[Notarial Seal]

(Signed) P. J. KENNEDY,
Notary Public in and for the City and County of
San Francisco, State of California. [1053]

And the Court finds from the surrounding circumstances that it was the intention of the said Oxford Mining Company and of the defendant companies to provide to the said Oxford Mining Company the beneficial and uninterrupted use of 300 actual horsepower, including such starting surges and other con-

ditions which would reasonably insure to the said Oxford Mining Company and its successors the right to use 300 actual horse-power in connection with the ordinary machinery used in mining and the ordinary forms of induction motors in common use in mining for loads of 300 horse-power or less. The Court further finds that for loads of 300 horse-power or less induction motors having an inherent phase displacement and power factor less than unity were in ordinary and practical use in mining, and that the use of said ordinary and practical machinery in mining operations was contemplated by the defendants at the time of the execution of the contract, and that the power contracted for was 300 actual horse-power as distinguished from 300 apparent horse-power, and that the contract contemplated the practical and beneficial use of 300 actual horse-power as ordinarily spoken of and ordinarily measured by common and ordinary instruments for the measurements of horse-power. The Court further finds that the common and ordinary instrument and device in universal use for the measurement of horse-power was and is the wattmeter, which measures actual as distinguished from apparent power.

The Court further finds that in making the said contract the said Oxford Mining Company relied, and had a right to rely, upon the representations made by the said defendant companies to the effect that it was the purpose of defendant companies to furnish the amount of power stipulated in the contract in real, actual and practical working efficiency, together with such momentary surges necessary to

start the machinery of the Oxford Company, or its successor, the uninterrupted use of 300 real horse-power to be used in connection [1054] with ordinary motors commonly used upon loads of 300 horse-power or less, including induction motors.

Defendants objected to making of said Finding No. VII on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that the finding was not within the issue, more expressly for the following reason, and in the following particulars: That that portion of the finding preceding the contract as set up in said finding is immaterial and not within the issue of the case, for the reason that the contract between the parties was in writing and could not be varied, explained or modified by the extrinsic facts or circumstances referred to in the finding, all of such matters having merged in the contract itself. And that portion of the finding which follows the contract as set out therein is more expressly objected to for the reasons following, that the Court finds from the surrounding circumstances that it was the intention of the parties to provide the Oxford Mining Company with the beneficial and uninterrupted use of the 300 actual horse-power, including such starting surges and which would reasonably insure to the said Oxford Mining Company and its successors the right to use 300 actual horse-power in connection with the ordinary machinery used in mining and the ordinary forms of induction motors in common use in mining for loads of 300 horse-power or less. In this portion of the finding the Court finds what the intention of

the parties was not from the contract itself, but from the surrounding circumstances, and, in effect, makes between the parties a contract different from that which they had themselves made in writing. The Court then finds that certain forms of induction motors having an inherent phase displacement and a power factor less than unity were in common use and were contemplated by the defendants at the time of the execution of the contract. This portion of the finding is also immaterial and not based upon any evidence whatsoever. The Court then finds that the power contracted for was 300 actual horse-power as distinguished [1055] from 300 apparent horse-power, and that the contract contemplated the practical and beneficial use of 300 actual horse-power as measured by wattmeter. This portion of the finding is objectionable, more expressly in this, that if it is based upon a construction of the contract itself, the contract is erroneous; if based upon evidence outside of the contract, it is immaterial, since the contract cannot be varied, explained or modified by such evidence, and in any event, the same is not supported by any evidence in the case. The Court then proceeds to find that the Oxford Mining Company had a right to rely upon the representations made by the defendant companies, to the effect that it was the purpose of the defendant companies to furnish the amount of power stipulated in the contract in real, actual and practical working efficiency, together with such momentary surges necessary to start the machinery of the Oxford Company or its successors, the uninterrupted use of 300 real horse-

power to be used in connection with ordinary motors commonly used upon loads of 300 horse-power or less, including induction motors. The objection to this portion of the finding is more especially that there is no evidence upon which to base it, no such representations having been made. Further that the Court speaks for itself as to what is to be furnished, and that if the finding is intended as a construction of the contract itself, it is erroneous in that the contract provides for the furnishing of a current of not to exceed 300 horse-power, and does not provide for the delivery of power at all, and that if said finding is not based upon the contract itself but upon extrinsic evidence, then the same is immaterial and not within the issue in the case, for the reason that the terms of the written contract sued upon cannot be varied, modified or explained by intrinsic facts or evidence, and the relief of the parties, if any, might be measured by the terms of that contract itself. Each and all of which said objections were overruled by the Court, to which ruling and order of the Court counsel for the defendants then and there excepted, which exception was allowed by the Court. [1056]

XIII.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. VIII, which is in words and figures as follows:

FINDING VIII.

The Court further finds that the defendant corporations herein completed the construction of the water-power plant provided for in the said agree-

ment of October 14, 1909, prior to the 31st day of October, 1910, and that on the 31st day of October, 1910, the said Oxford Mining Company elected to take the 300 horse-power provided for in the said agreement for its full benefit and practical and uninterrupted use, and elected to convey the property heretofore described in the said contract of October 14, 1909, to the defendant corporations, and that the defendant corporations accepted said election and waived the two years' time prescribed in said contract for the making of the said election, and that the said Oxford Mining Company duly conveyed to the defendant corporations all of the property described in the agreement of October 14, 1909, on or about the 22d day of April, 1911. The Court further finds that from the 22d day of April, 1911, to the 8th of November, 1912, the Oxford Mining Company, or its successors, did not receive any of the power contracted for from the defendant corporations.

To the making of Finding VIII defendants objected, on the ground that it is contrary to the evidence, not supported by sufficient evidence, and the finding was not within the issues, more especially for the reason that the contract between the parties is in writing and the terms of the contract speak for themselves as to the rights of the respective parties, that the same cannot be varied, modified or explained by extrinsic evidence, or by any extrinsic facts or circumstances. [1057] Objection is further made to that portion of the finding which relates to the failure to deliver power before November, 1912, for the reason that the evidence conclusively shows that

no demand for power or current was made during that period and no complaint was made because power or current was not, during that period, delivered. Each and all of which said objections were overruled by the Court, to which ruling and order of the Court counsel for the defendant then and there excepted, which exception was allowed by the Court.

XIV.

The District Court for the District of Alaska, Division Number One, further erred in making Finding No. IX, which is in words and figures as follows:

FINDING IX.

On or about the 1st of June, 1912, the Oxford Mining Company sold its property and property rights in Southeastern Alaska to the plaintiff company, including the rights growing out of the said contract of October 14, 1909, and the Court further finds that the plaintiff company is engaged in developing its mines in Sheep Creek and Silver Bow Basin, both from the Sheep Creek and Silver Bow Basin side, and is engaged in pushing its development work as rapidly as possible, and that the said prosecution of the said development work involves the speedy application of the power available to the plaintiff company, and that if the plaintiff company is deprived of said power, its progress will be greatly delayed and interest burdens upon its bonds and other expenses will be greatly increased; and that there is no other source of power for the carrying on of the plaintiff's development work, and that the plaintiff

[1058] will be greatly and irreparably damaged if it is deprived of the power provided for in the said contract of October 14, 1909, and that said damage cannot be compensated at law or ascertained.

To the making of said Finding No. IX, defendants object, on the ground that it is contrary to the evidence, not supported by sufficient evidence and the finding is immaterial and not within the issue, which objections were each and all, then and there, overruled by the Court, to which ruling and order of the Court the defendants then and there excepted, which exceptions were then and there allowed by the Court.

XV.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. X, which is in words and figures as follows: [1059]

FINDING NO. X.

That the arrangements for the development of the plaintiff's mining property were made in reliance upon the contract of the defendant corporations herein that they would furnish an uninterrupted current of 300 electric horse-power for the actual and practical use of the plaintiff corporation, and that relying upon said contract and representations of the defendants, the plaintiff engaged a force of over 175 men to perform its underground development work in its Perseverance mine at Silver Bow Basin, and that the daily expense of maintaining said working force is \$750.00, and that the plaintiff has outstanding bonds in the principal sum of \$3,500,000.00 upon which interest is accumulating and upon which no interest can be paid until the

development work of the plaintiff company is completed. That the deprivation of the plaintiff of the power so contracted for will greatly delay the date when the mines of the plaintiff company will become productive, and will cause the plaintiff herein to discharge a number of its laborers, and it will be difficult to secure further laborers upon the resumption of the plaintiff's work unless the same are kept continuously at work.

That the defendants objected to the making of said finding on the ground that the same was contrary to the evidence, not supported by sufficient evidence, and was not material and not within the issues, which said objections were then and there overruled by the Court, to which ruling and order of the Court the defendants, by counsel, then and there excepted, which exception was allowed by the Court. [1060]

XVI.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. XI, which is in words and figures as follows:

FINDING XI.

The prior to the 8th of November, 1912, the defendant companies were notified of the assignment of the rights of the Oxford Mining Company to the plaintiff and were requested to deliver the uninterrupted current of 300 horse-power for the use of the plaintiff; and that prior to the 8th of November, 1911, there had been installed upon the property of the plaintiff in Silver Bow Basin at its Perseverance Mine a 200 horse-power motor of the usual type in mining operations of like character throughout the

United States and in the Juneau Mining District, which said motor was connected with an Ingersoll-Rand compressor using 165 horse-power at 80 pounds pressure, and that there had been installed at the Sheep Creek plant of the company a 150 horse-power motor and a 20 horse-power motor; and that in connection with the 150 horse-power motor there was used a compressor of 165 horse-power for the purpose of driving an adit tunnel from the Sheep Creek mines to a point underneath the Ground Hog and Perseverance mines; and that on the 8th of November, 1911, the defendant corporations had connected their power-plant with the transmission line of the plaintiff company and set in their power-house a so-called automatic circuit-breaker, which said circuit-breaker was set so as to break a circuit when a maximum of between 80 and 100 amperes was being drawn over the transmission line of the plaintiff company. That from the 8th day of November, 1912, to the 2d day of December, 1912, the machinery above described at Sheep Creek was operated without difficulty from said current so supplied by the defendant corporations, and the setting [1061] of the said circuit-breaker proved sufficient to produce a sufficient practical working efficiency at the power-house of the defendant company of three hundred horse-power. That on the 2d day of December the machinery of the plaintiff company in the Silver Bow Basin or Perseverance mine were also placed upon the said circuit and successfully operated until the 4th of December, when the operations of the Perseverance mine were

temporarily suspended by reason of a fire which destroyed a 100-stamp mill of the plaintiff company at that point. That between the 4th and 6th of December, 1912, one Proebstal, an electrician of the defendant companies, visited the Sheep Creek power-house and reduced the setting of the circuit-breaker to a point which would throw the same out and break the current when more than 60 amperes were drawn through said circuit. The voltage being maintained at about 2300. That the said circuit-breaker so installed is not of the usual ordinary type used upon feeders leaving power-houses but is what is known as an instantaneous circuit-breaker; that the ordinary and usual type of circuit-breaker placed upon feeders leaving direct from power-houses is what is known as a thirty second time relay circuit-breaker, which guards against the circuit-breaker being thrown out by momentary and unavoidable surges of current. That the starting of machinery which will consume a given amount of power often causes what is known as a starting surge, which lasts from ten to thirty seconds, but from a practical standpoint is not taken into account or charged for in electrical connections, and is disregarded and provided against by the use of the ordinary type of time relay circuit-breaker. That in the Juneau Mining District it is not customary for the defendant companies to charge any other customer for the necessary starting surges for machinery connected with the said power plant of the defendant companies, but that the power is measured upon the amount taken under normal conditions, that is to say, by the

amount of power taken after the machinery is started and in operation. [1062]

In making of which said Finding No. XI defendants objected on the ground that the same was contrary to the evidence, not supported by sufficient evidence, was not within the issues and immaterial, which objections go more especially to the following particular features of the finding:

That the Court finds that an instantaneous circuit-breaker is not the usual ordinary type in use upon feeders leaving power-houses, but that the ordinary type in use is a thirty second relay circuit-breaker. This part of the finding is contrary to the evidence and is immaterial, the question in the case being not what machinery is ordinarily used, but whether the quantity of current furnished complies with the conditions of the contract.

The Court further finds that it is not customary for the defendant companies to charge other customers for necessary starting surges. This part of the finding is immaterial, and is directly contrary to all the evidence in the case, the undisputed evidence showing that the defendant companies have no other customer or customers whatsoever; that they are not furnishing electric current to anyone except the plaintiff, with this exception, that they are accommodating the Alaska Juneau Mining Company, a corporation under the same management, by temporarily supplying them with current at a high rate, and there is no evidence to show that the Alaska Juneau Mining Company, at any time, used starting surges or current that were not paid for.

Each and all of said objections were then and there overruled by the Court, to which ruling and order of the Court defendants, by counsel, then and there objected, which objection was then and there allowed by the Court. [1063]

XVII.

The District Court for the District of Alaska, Division Number One, further erred in making Finding No. XII, which is in words and figures as follows:

FINDING No. XII.

That in establishing the circuit between the plaintiff and the defendant companies the defendant corporations have set their instantaneous circuit-breaker upon a theoretical basis of what is known as unity power factor, that is to say, the defendants have not installed a wattmeter upon said circuit nor set the circuit-breaker upon observations taken from an ammeter and their other meters, such as volt and ampere meters, at the time the wattmeter indicates a consumption of 300 horse-power, but that they have assumed that the power factor of the said circuit is 100 per cent, and multiplied the same by the voltage of 2300 volts and by the constant attributed to a three-phase electric current. The Court further finds that there is no circuit upon the power lines of the defendant companies, either in connection with the plaintiff or any of their other lines, which has a power factor of unity or 100 per cent. And the Court further finds that at the present time there are no motors other than induction motors used in connection with the power plant of defend-

ant companies. The Court further finds that wherever an induction motor is used the power factor is less than unity and the actual and effective horsepower passing over any circuit under such conditions can only be measured by a wattmeter and the circuit-breakers in connection with such circuits set in accordance with observations taken from a wattmeter. The Court further finds that in the summer of 1912 the defendants ordered a curve drawing wattmeter to be placed upon the switch-board [1064] of the circuit between the plaintiff and the defendant companies, and that the same is in possession of the defendants but the defendants have not installed said wattmeter. And the Court further finds that the defendants have refused to allow the plaintiff to install a wattmeter upon the panel at the power-house of the defendant companies, at which panel connection is made between the transmission line of the plaintiff and the power-house of the defendant companies. The Court further finds that in estimating and measuring the power used by the defendants themselves upon their own circuits the defendants use a wattmeter. The Court further finds that the wattmeter is the common ordinary and universal device used in measuring horse-power.

That the defendants objected to making Finding No. XII, on the ground that it is contrary to the evidence, not supported by sufficient evidence, on the ground that the finding is not material and not within the issues, each and all of which said objections were overruled by the Court, to which ruling and order of the Court defendants, by counsel, then

and there excepted, which exceptions were then and there allowed by the Court.

XVIII.

The District Court for the District of Alaska, Division Number One, further erred in making Finding No. XIII, which is in words and figures as follows: [1065]

FINDING No. XIII.

The Court further finds that it is the common practice where a certain amount of horse-power is normally used, for the producing company to allow a reasonable starting surge to the consumer sufficient to start and put in operation machinery which will normally consume the current provided for.

Defendants objected to the making of Finding No. XIII, on the ground that it is contrary to the evidence, not supported by sufficient evidence, and that it is immaterial and not within the issues of the case; that whatever might be the custom relating to starting surges, this custom would not affect the right of parties in this case, in view of the facts that the rights of the parties are limited and defined by a written contract, explicit in its terms. Each and all of which said objections were then and there overruled by the Court, to which ruling and order of the Court defendants, by counsel, then and there excepted, which exceptions were allowed by the Court.

XIX.

The District Court for the District of Alaska, Division Number One, further erred in making Finding No. XIV, which is in words and figures as follows: [1066]

FINDING XIV.

The Court further finds that on or about the 13th day of December, 1912, an electric current was again turned on to the operation of the machinery at the Perseverance mine and the machinery continued to operate until the night of the 24th of December, when the mine shut down for Christmas Day, and that since said time the plaintiff has been unable to start the machinery at the Perseverance mine with the current provided by the defendant except under orders of the Court requiring the defendants to hold in their circuit-breaker during the momentary starting surge.

Said Finding No. XIV was objected to by counsel for the defendants on the ground that the same was contrary to the evidence, not supported by sufficient evidence, and the finding was immaterial and not within the issues. The matters related to in the finding are especially immaterial, for the reason that the contract provides that a certain quantity of current shall be furnished, and the question of whether such current is made effective or what is done with it in no wise affects the rights of the parties, which said objection was then and there overruled by the Court, to which order and ruling of the Court defendants, by counsel, then and there excepted, which exceptions were allowed by the Court. [1067]

XX.

The District Court for the District of Alaska, Division Number One, further erred in making Finding No. XVI, which is in words and figures as follows:

FINDING No. XVI.

The Court further finds that the defendants herein have adopted the practice, whenever the said instantaneous circuit-breaker is thrown out, of requiring the plaintiff to notify the defendant corporations at their head office at Treadwell, Alaska, a point about two miles distant from the Sheep Creek power plant and across Gastineau Channel, an arm of the North Pacific Ocean, and that the defendants refuse to allow their electricians at the Sheep Creek power plant to restore the circuit-breaker whenever the same goes out, but require that they be notified at their head office at Treadwell and then send a man across Gastineau Channel to replace the circuit-breaker, and that this practice deprives the plaintiff of an uninterrupted current for periods covering from one to eight hours whenever the said circuit-breaker goes out. The Court finds that at no time since the 6th day of December, 1912, except during the momentary starting surges hereinbefore described, have the defendants furnished the plaintiff with as much as the 300 horse-power provided for in the said contract, and further finds that the defendants have failed to provide the plaintiff with an uninterrupted current of 300 horse-power.

Said finding was objected to by counsel for the defendants on the ground that the same was contrary to the evidence, not supported by sufficient evidence, and was immaterial and not within the issues in the case. That portion of the Court's finding where it finds that the [1068] defendants have not since the 6th day of December, 1912, except in the momen-

tary starting surges in the findings referred to, furnished the plaintiff with 300 horse-power provided for in the contract, or have failed to furnish the plaintiff with an uninterrupted current of 300 horse-power is wholly unsupported by the evidence, contrary to the evidence and conflicting with other findings made by the Court. All of which said objections were overruled by the Court, to which order and ruling of the Court defendants, by counsel, excepted, which exceptions were then and there allowed by the Court.

XXI.

That the District Court for the District of Alaska, Division Number One, erred in making Finding No. XVII, which is in words and figures as follows: [1069]

FINDING No. XVII.

The Court further finds that at the time the said contract of October 14, 1909, was executed neither the Oxford Mining Company nor its predecessors in interest had any other power plant with which to connect the said current of 300 horse-power, and that no other plant was in contemplation at that time, and that it was the intention of the defendants to provide for the actual and beneficial use of a current of 300 real horse-power at the power plant of the defendant corporation, and that from the surrounding circumstances a starting surge was naturally to be implied or presumed, and that without a starting surge (in connection with induction motors, which the Court finds is the ordinary type of motor in mining use, for loads of 300 horse-power or less),

the practical and beneficial use of more than 100 horse-power could not have been obtained. The Court further finds that under the conditions existing aforesaid at the time the contract was executed the parties could not have contemplated the uninterrupted delivery of 300 horse-power provided for in the contract unless a starting surge was implied in the said contract.

The defendants objected to said Finding No. XVII on the grounds that the same is contrary to the evidence, was not supported by sufficient evidence, and that said finding was immaterial and not within the issues. The objection to this finding being more especially that the fact that the first part of the finding relating to the fact that the Court finds that [1070] the current to be furnished in the contract was one of real or developed horse-power as distinguished from a current from which 300 horse-power can be developed, such construction is erroneous, and if regarded as a finding based upon extrinsic evidence is immaterial, in view of the fact that the rights of the parties are determined by the terms of the written contract sued upon, which is in evidence, and that part of Finding No. XVII which the Court finds from surrounding circumstances that the starting surge was naturally to be implied or presumed, and that without a starting surge in connection with induction motors, which the Court finds to be the ordinary kind of motor in mining use for loads of 300 horse-power or less, the practical and beneficial use of more than 100 horse-power could not have been obtained, was wholly contrary to the evidence,

and further is immaterial and not within the issues, since the rights of the parties must be determined from the contract itself, and by that contract the current to be furnished is limited to a current of not to exceed 300 horse-power; and that further portion of the Court's finding in which the Court finds that the parties could not have contemplated the uninterrupted delivery of 300 horse-power provided for in the contract unless a starting surge was implied, is open to the same special objections last mentioned, all of which said objections were then and there overruled by the Court, to which ruling and order of the Court, defendants by counsel then and there excepted, which exception was allowed by the Court. [1071]

XXII.

The District Court for the District of Alaska, Division Number One, erred in making Finding No. XVIII, which is in words and figures as follows:

FINDING No. XVIII.

The Court further finds that an inverse time relay circuit-breaker which will resist ordinary overloads for the period of thirty seconds is the usual, common and proper device for maintaining connections upon lines leaving power-houses, and that such circuit-breaker should be installed upon the switch-board of the defendant companies so as to protect the defendant companies from short circuits, yet provide enough resistance to prevent the circuit between the plaintiff and defendant companies from being broken under ordinary starting surges.

Which said Finding No. XVIII was objected to

by defendants on the ground that it is contrary to the evidence, not supported by sufficient evidence and is immaterial and not within the issues.

That said finding is objectionable more especially in that it is immaterial whether or not a time relay circuit-breaker is the proper device under the circumstances related to in the finding, since the contract sued upon does not provide for excessive currents of any duration, but explicitly limits the current to one of not to exceed 300 horse-power; and further, that it is not within the province of the Court [1072] to determine what device or machine is proper or not proper, the only question being whether the current furnished complies with the conditions of the contract. Each and all of said objections were then and there overruled by the Court, to which ruling and order of the Court defendants by counsel then and there excepted, which exception was then and there allowed by the Court.

XXIII.

That the Court erred in concluding as indicated by its first conclusion of law, which is in words and figures as follows:

CONCLUSION OF LAW No. I.

That the plaintiff herein is entitled to have the contract, hereinbefore set forth, specifically performed by the defendants and each of them.

Defendants object to conclusion No. I herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an ex-

ception is hereby allowed the defendants.

XXIV.

That the Court erred in making its conclusion of law No. II, which is in words and figures as follows:
[1073]

CONCLUSION OF LAW No. II.

That the plaintiff herein is entitled to the actual and beneficial use of an uninterrupted current of 300 real horse-power.

Defendants object to conclusion No. II herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants.

XXV.

That the Court erred in making its conclusion of law No. III, which is in words and figures as follows:
[1074]

CONCLUSION OF LAW No. III.

That the plaintiff is entitled to all reasonable surges of power necessary in starting ordinary apparatus used in connection with mining, so that an uninterrupted and normal current of 300 actual horse-power may be continuously used after the starting of such machinery.

Defendants object to conclusion No. III herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants.

XXVI.

That the Court erred in making its conclusion of law No. IV, which is in words and figures as follows:
[1075]

CONCLUSION OF LAW No. IV.

That the contract in question contemplated and referred to the use of real power and that the connections of the defendant companies with the transmission line of the plaintiff company be so established as to prevent the breaking of said circuit upon the use of said momentary starting surges, and that the circuit-breakers of the defendant companies be so installed so as to permit reasonable and momentary starting surges.

Defendants object to conclusion No. IV herein on the grounds that it is contrary to the findings; that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants.

XXVII.

That the Court erred in making its conclusion of law No. V, which is in words and figures as follows:
[1076]

CONCLUSION OF LAW No. V.

That the defendant companies so arrange their connection with the power line of the plaintiff company that in addition to said starting surges the plaintiff company be enabled to draw 300 actual horse-power uninterruptedly in their operations, and that the apparatus and devices installed by the defendants for the purpose of maintaining a circuit with the plaintiff company be set and regulated

according to approved wattmeter readings so that the current will not be interrupted except when more than 300 actual horse-power, according to wattmeter readings, is being taken by the plaintiff of the defendant companies.

Defendants object to conclusion No. V herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants.

XXVIII.

The Court erred in making its conclusion No. VI, which is in words and figures as follows: [1077]

CONCLUSION OF LAW No. VI.

That the plaintiff is entitled to have established upon the connection of the plaintiff with the defendant companies at the switch-board at the power plant of the defendant companies situated at Sheep Creek a thirty second inverse time relay circuit-breaker so as to provide for ordinary overloads necessary to starting surges.

Defendants object to conclusion No. VI herein on the grounds that it is contrary to the findings; that it is contrary to the evidence in the case and that it is contrary to law; which objections are overruled by the Court, and to such ruling of the Court an exception is hereby allowed the defendants.

XXIX.

That the District Court for the District of Alaska, Division Number One, erred in failing and refusing to find and make as its Finding No. IV, requested

by the defendants, which said Finding No. IV as requested by the defendants is in words and figures as follows: [1078]

FINDING OF FACT No. IV.

The Court finds that under and pursuant to the agreements, contracts and arrangements made between the parties and elsewhere referred to in these findings, the defendant corporations had constructed and did construct at Sheep Creek in the Territory of Alaska, an electric power-plant of the capacity of approximately 6,000 horse-power, which said power plant was constructed and completed within the time agreed upon and in the manner agreed upon in full compliance with the agreements herein elsewhere referred to; that at a time after the construction of said plant and prior to the commencement of this action demand was made upon the defendant companies to furnish a current agreed to be furnished to the Oxford Company, which said demand was made by the plaintiff herein, and the plaintiff then and there also notified the defendant companies that it had succeeded to the rights of the Oxford Company in that behalf; and that the rights of said Oxford Company had been assigned to the plaintiff company; that immediately upon demand having been made in that behalf steps were taken to connect the transmission lines of the plaintiff company with the bus-bars of at the power plant of the defendant companies, and that from that time on including the time when this action was commenced the defendant companies made available for the use of the plaintiff company and permitted the plaintiff company to take

from its bus-bars at its said power plant an electric current of approximately 60 amperes with a voltage of 2,300 impressed. [1079]

That the defendants by counsel duly and regularly excepted to the refusal and failure of the Court to find the facts set up in said Finding No. IV, above referred to, which exception was then and there allowed by the Court.

XXX.

That the District Court for the District of Alaska, Division Number One, erred in failing to make Finding No. V requested by the defendants, and to find the facts as herein stated, which said Finding No. V is in words and figures as follows:

FINDING OF FACT No. V.

The Court further finds that 300 horse-power can be developed from an electric current of 56.2 amperes with a voltage of 2300 impressed.

To which failure of the Court to so find the facts so stated in Finding No. V and the refusal to make said finding, the defendants by counsel duly excepted, which exception was then and there allowed by the Court. [1080]

XXXI.

The District Court for the District of Alaska, Division Number One, erred in not making and concluding as a matter of law from the findings made as requested by the defendants, conclusion of Law No. 1, which said conclusion of Law No. 1 is in words and figures as follows:

CONCLUSION OF LAW No. I.

From the facts found the Court concludes that the

defendant companies, in making available for the plaintiff's use an electric current in excess of 56.2 amperes with a voltage of 2300 impressed, have complied with each and all of the terms of the contracts entered into between the parties on their part.

To the order of the Court denying to make and enter said conclusion of Law No. 1 as above set forth the defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [1081]

XXXII.

The District Court for the District of Alaska, Division Number One, further erred in not making and entering conclusion of Law Number II requested by the defendants, which said conclusion of Law No. II as requested by the defendants is in words and figures as follows:

CONCLUSION OF LAW No. II.

The Court further concludes from the facts found that the plaintiff's bill of complaint be dismissed and that the defendants recover their costs and disbursements in this behalf incurred.

To the refusal of the Court to make and enter said conclusion of Law No. II so requested by the defendants, the defendants by counsel then and there excepted, which exception was then and there allowed by the Court. [1082]

XXXIII.

That the District Court for the District of Alaska, Division Number One, erred in making and entering its decree herein, which is in words and figures as follows: [1083]

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

No. 968—A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT
A. KINZIE,

Defendants.

Decree.

This matter having come on heretofore for hearing and the testimony of the plaintiff and the defendants having been submitted herein taken under advisement and the Court having made and entered its findings of fact and conclusions of law herein, the parties having at all times appeared by their respective attorneys, Messrs. Shackleford & Bayless, and Z. R. Cheney for the plaintiff, and Messrs. Hellen-thal & Hellenthal for the defendants, and the Court being fully advised in the premises:

IT IS ORDERED, ADJUDGED AND DECREED:

1. That the plaintiff is entitled to have and receive of and from the defendants under and by virtue of the contract set forth in the plaintiff's complaint the uninterrupted and beneficial use of 300 real or actual

horse-power to be supplied by electric current:

2. That the plaintiff is entitled to have and receive of the defendants all reasonable starting surges used in connection with the ordinary machinery used in mining for the application of 300 horse-power or less and necessary to the starting of such machinery and to the beneficial use of an uninterrupted current of 300 horse-power;

3. That the plaintiff is entitled to the use of real and not apparent power, the same to be measured by wattmeter, and that the plaintiff is entitled to use upon the circuit connecting it with the power-house of the defendants any ordinary motors used in mining operations (whether of the induction type or otherwise) commonly and ordinarily used in mining operations consuming 300 horse-power or less.

IT IS ORDERED, ADJUDGED AND DECREED that the defendants herein so set and maintain their connections, circuit-breakers and other appliances with the plaintiff company that the actual uninterrupted and beneficial use of the before mentioned rights of the plaintiff shall not in any way be interfered with, and the defendants are enjoined from using any appliances which will deprive the plaintiff of the enjoyment of the rights above decreed to the plaintiff; and defendants are perpetually enjoined from maintaining any circuit-breaker of other appliance which will deprive the plaintiff of 300 actual horse-power, or any part thereof, to be measured by wattmeters or which will deprive [1084] plaintiff of any reasonable starting surges necessary to the enjoyment of the uninterrupted use

of the said 300 actual horse-power.

The Court further decrees that the plaintiff be allowed to install upon the switch board connecting the plaintiff's power line with the defendants' power-house a wattmeter, voltmeter and ammeter, and that the same be installed in such a way that the plaintiff may have the same under lock and key for its information and inspection to check the wattmeter, voltmeter and ammeter readings of the defendant companies at said point.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED in accordance with the foregoing that the contract of October 14, 1909, be specifically performed by the defendants.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants and each of them are hereby enjoined from doing any act or thing which will interfere with the enjoyment of the rights herein decreed to the plaintiff and against the defendants.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants maintain and install upon the connection of the plaintiff's power line with the power-house of the defendants at the switch board at the power-house at Sheep Creek an inverse thirty second time relay circuit-breaker in such a manner as to provide reasonable starting surges in connection with the operation of the machinery of the plaintiff company upon said power line, which said circuit-breaker shall be set at all times so as to give an uninterrupted current of 300 real horse-power as distinguished from apparent

power, to be set and maintained in addition to the thirty second resistance in the said circuit-breaker which is decreed for the purpose of providing to the plaintiff reasonable and adequate means of obtaining starting surges without interruption in their operations, and that the plaintiff have and recover of and from the defendants its costs and disbursements herein laid out and expended.

Done in open court this 12th day of June, 1913.

PETER D. OVERFIELD,
Judge. [1085]

XXXIV.

That the District Court for the District of Alaska, Division Number One, erred in overruling the defendants' motion for new trial herein.

J. A. HELLENTHAL,
S. HELLENTHAL,
HELLENTHAL & HELLENTHAL,
Attys. for Appellants, Alaska Treadwell Gold Mining Co., Alaska United Gold Mining Co., Alaska Mexican Gold Mining Co., and Robert A. Kinzie.

[Endorsed]: Due service by copy of the within admitted this 7th day of August, 1913.

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,
Attorneys for Plaintiff-Defendant.

Original. No. ——. In the District Court for the Territory of Alaska, Division No. 1. Alaska Treadwell Gold Mining Company, a Corporation et al., Appellants, vs. Alaska Gastineau Mining Company, a corporation, Appellee. Assignment of

1170 *Alaska Treadwell Gold Mining Co. et al.*

Errors. Hellenthal & Hellenthal, Attorneys for Appellants, Office: Juneau, Alaska. Filed in the District Court, District of Alaska, First Division. Aug. 8, 1913. E. W. Pettit, Clerk. By H. Malone, Deputy. [1086]

*In the District Court for the District of Alaska,
Division No. One, at Juneau.*

*In the United States Circuit Court of Appeals for
the Ninth Circuit, Holden at San Francisco.*

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT
A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Appellee.

Supersedeas.

This matter coming on to be heard on the application of the appellants herein for a supersedeas to stay the enforcement of the judgment and decree rendered herein pending an appeal to the United States Circuit Court of Appeals for the Ninth Circuit, and it appearing to the Court that a petition for appeal accompanied by an assignment of errors was duly filed herein, and the appeal duly allowed as

prayed for, and a citation was duly issued herein, and said cause duly and regularly appealed to the United States Circuit Court of Appeals for the Ninth Circuit, holden at San Francisco;

NOW, THEREFORE, IT IS ORDERED that the enforcement of the judgment and decree herein rendered be stayed pending the appeal to the United States Circuit Court of Appeals for the Ninth Circuit, provided that a certain order made herein by the Honorable Peter D. Overfield, during the pendency of the action, to wit, on the 1st day of January, 1913, relating to the furnishing of starting surges, under the conditions and in the manner referred [1087] to in said order, be continued in force during the pendency of the appeal herein, provided that the service now given to plaintiff be in no way disturbed or impaired and that the circuit-breaker be held in upon plaintiff's request without any unnecessary delay.

The amount of the supersedeas bond, including the cost bond on appeal, having by the Court been fixed at \$10,000, and the appellants having given a bond in the sum of \$10,000, with sufficient sureties to the effect that they will answer all damages and costs if they fail to make their plea good, and the sufficiency of said bond and the sureties therein having been approved by the Court this writ shall be and take effect from and after the date hereon and continue in effect until the above-entitled cause has been finally disposed of by the United States Circuit Court of Appeals for the Ninth Circuit, and that the

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appellee is given an exception to the above order.

FRED. M. BROWN,

Judge for the District for the Territory of Alaska.

Entered Court Journal No. I, page 116, 117.

[Endorsed]: Original. No. ——. In the District Court for the Territory of Alaska, Division No. 1. Alaska Treadwell Gold Mining Company, a corporation, et al., Appellants, vs. Alaska Gastineau Mining Company, a Corporation, Appellee. Supersedeas. Hellenthal & Hellenthal, Attorneys for Appellants. Office: Juneau, Alaska. Filed in the District Court, District of Alaska, First Division. Aug. 8, 1913. E. W. Pettit, Clerk. By H. Malone. [1088]

[Bond on Appeal.]

*In the District Court for the District of Alaska,
Division No. One, at Juneau.*

*In the United States Circuit Court of Appeals for
the Ninth Circuit, Holden at San Francisco.*

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT
A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Appellee.

KNOW ALL MEN BY THESE PRESENTS:

That we, the Alaska Treadwell Gold Mining Company, a corporation; Alaska United Gold Mining Company, a corporation; Alaska Mexican Gold Mining Company, a corporation; and Robert A. Kinzie, appellants herein, and George F. Miller, surety, all residents of the District of Alaska, are held firmly bound unto the above-named Alaska Gastineau Mining Company, a corporation, appellee, in the sum of \$10,000 no/100, to be paid to the said Alaska Gastineau Mining Company, a corporation, for the payment of which well and truly to be made, we bind ourselves and each of us, and each of our heirs, executors, administrators and assigns and successors jointly and severally firmly by these presents.

Sealed with our seals and dated this 8 day of August, in the year of our Lord, one thousand nine hundred and thirteen.

Whereas the above-named Alaska Treadwell Gold Mining Company, a corporation, Alaska United Gold Mining Company, a corporation, Alaska Mexican Gold Mining Company, a corporation, and Robert A. Kinzie, have prosecuted an appeal to the United States Circuit Court of Appeals for the Ninth Circuit, to reverse the judgment and decree rendered in the above-entitled suit by Peter [1089] D. Overfield, Judge of the District Court for the District of Alaska;

Now, therefore, the condition of this obligation is such that if the above-named Alaska Treadwell Gold Mining Company, a corporation, Alaska United Gold Mining Company, a corporation, Alaska Mexi-

can Gold Mining Company, a corporation, and Robert A. Kinzie, shall prosecute their said appeal to effect and answer all damages and costs, if they fail to make said appeal good then this obligation shall be void; otherwise the same shall be in full force and effect.

ALASKA TREADWELL GOLD MINING
CO.

By ROBT. A. KINZIE,

Its Agent and Genl. Supt.

ALASKA UNITED GOLD MINING CO.,

By ROBT. A. KINZIE,

Its Agent and Genl. Supt.

ALASKA MEXICAN GOLD MINING CO.,

By ROBT. A. KINZIE,

Its Agent and Genl. Supt.

ROBT. A. KINZIE,

GEORGE F. MILLER,

Surety.

Approved:

FRED M. BROWN,

Judge.

Filed in the District Court, District of Alaska,
First Division. Aug. 8, 1913. E. W. Pettit, Clerk.
By H. Malone, Deputy. [1090]

*In the District Court for the District of Alaska,
Division No. One, at Juneau.*

*In the United States Circuit Court of Appeals for
the Ninth Circuit, Holden at San Francisco.*

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corporation,
ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation and ROBERT
A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Appellee.

Citation on Appeal [Original].

United States of America,—ss.

To the Alaska Gastineau Mining Company, a cor-
poration, Greeting:

You are hereby cited and admonished to be and
appear at the United States Circuit Court of Ap-
peals for the Ninth Circuit, to be holden at Seattle,
in the State of Washington, within thirty (30) days
from and after this date, pursuant to an appeal filed
in the Clerk's office of the District Court for the Dis-
trict of Alaska, Division Number One, at Juneau, in
the above-entitled cause, wherein the Alaska Gasti-
neau Mining Company, a corporation, the appellee
herein was the plaintiff, and the Alaska Treadwell
Gold Mining Company, a corporation, Alaska United

Gold Mining Company, a corporation, Alaska Mexican Gold Mining Company, a corporation, and Robert A. Kinzie, appellants herein, were the [1091] defendants, to show cause, if any there *by*, why the judgment and decree entered in said cause of the Alaska Gastineau Mining Company, plaintiff, vs. Alaska Treadwell Gold Mining Company, a corporation, Alaska United Gold Mining Company, a corporation, Alaska Mexican Gold Mining Company, a corporation, and Robert A. Kinzie, defendants, and referred to in the petition for an appeal filed in said cause, which said appeal was by order of the Court allowed as prayed for, should not be corrected and speedy justice should not be done to the parties in that behalf.

WITNESS the Honorable EDWARD DOUGLAS WHITE, Chief Justice of the United States, this 8th day of August, in the year of our Lord one thousand nine hundred and thirteen.

FRED M. BROWN,

Judge for the District Court for the District of Alaska. [1092]

[Endorsed]: Original. No. ——. In the District Court for the Territory of Alaska, Division No. 1. Alaska Treadwell Gold Mining Company, a Corporation, et al., Appellants, vs. Alaska Gastineau Mining Company, a corporation, Appellee. Citation on Appeal.

Due service by copy of the within admitted this
8th August, 1913,

SHACKLEFORD & BAYLESS,
Z. R. CHENEY,
Attorneys for Plaintiff-Defendant.

Filed in the District Court, District of Alaska,
First Division. Aug. 8, 1913. E. W. Pettit, Clerk.
By H. Malone, Deputy. [1093]

(Copy)

*In the District Court for the Territory of Alaska,
First Division.*

No. 968—A.

ALASKA GASTINEAU MINING COMPANY, a
Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, et al.,

Defendants.

Decision.

This is a suit to compel specific performance of a contract calling for 300 horse-power, to which a demurrer has been interposed. Under the pleadings and evidence the first and subsequent acts of the parties to the contract in question with reference to what was in their minds when the term "Three hundred horse-power" was used therein appears chronologically as follows:

A meeting of the representative of the Oxford

Company and the International Trust Co., Shackelford, and the representatives of the defendant companies, by their agents and officers, Bradley and Taylor, in the fall of 1909 at Juneau, Alaska, at which time the amount of power necessary for the plaintiff or its predecessors in interest to retain under the then contemplated contract and lease to properly operate its plant on its then owned and formerly operated mining property at Sheep Creek and which might under the then known surrounding conditions be necessary for its operation in the future was discussed and the conclusion reached upon the professional judgment of the said Bradley and Taylor, who were familiar, not only with the properties and plant of the plaintiff then in question, but also more or less experts in the subject of electrical currents and [1094] power plants, and the purpose for which the electric current was to be used.

This discussion led to the statement by the defendants' representatives that 200 electric horsepower would be sufficient for the plaintiff's purpose, but a reservation was made by Mr. Shackelford, the plaintiff's agent, to further substantiate after consultation with the officers of the Oxford Company and the International Trust Co. the amount of power thought necessary to be reserved under the contract and the contemplated lease, then tentatively drawn.

Mr. Shackelford accordingly then went to Boston and consulted the officers of the corporations above mentioned in Boston, among whom was one Henry Endicott, to whom at that time Mr. Bradley ad-

dressed the following letter, in the following language:

“Treadwell, Alaska, August 10, 1909.

Henry Endicott, Esq.

101 Tremont Street, Boston, Mass.

Dear Sir:

We have been talking to Mr. L. P. Shackleford about your water right on Sheep Creek, this district and both he and ourselves have agreed upon what we consider an extremely fair proposition our concession have been drawn up in the shape of a document which Mr. Shackleford will present to you as it is now this sheep creek water power is in jeopardy and can be taken at any time by adverse interests our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you are holding this water right for the value it has had and may have in the future for working the sheep creek mines and thirty stamp mill connected therewith estimating conservatively 150 HP is all the power these mines and mills ever required for their past operations. The mill is amply large enough for the mine and surely two hundred H.P. will more than take care of future requirements if the proposition is at all acceptable to you we would begin immediate work thereby preserving your rights and returning you some monthly income the proposition provides amply time in which you could decide either to sell the property outright or take two hundred H.P. for the operation of the mines and mill, your very truly,
F. W. BRADLEY.” [1095]

After consultation by the parties in interest for

the plaintiff corporation and its predecessors in interest the following wire was sent to Bradley, then in Idaho, by Mr. Endicott:

“Boston, August 23, 1909.

F. W. Bradley,
Wardner, Idaho.

Will lease power on terms proposed subject to consent trust company if three hundred horse-power is substituted for two hundred.

HENRY ENDICOTT.”

To which Mr. Bradley replied in the following terms ten days later:

“Henry Endicott

You may substitute three hundred for two hundred horse-power may I cable Supt. Kinzie to begin immediate protection measure.

F. W. BRADLEY.”

This resulted in a contract dated October 14, 1909, in the following words and figures:

“THIS INDENTURE AND AGREEMENT made and entered into this 14th day of October, 1909, by and between Oxford Mining Company hereinafter called the lessor and The Alaska Treadwell Gold Mining Company, the Alaska Mexican Gold Mining Company and the Alaska United Gold Mining Company, hereinafter called the lessees.

WITNESSETH, First, the lessor has this date and does by these presents lease unto the lessees all of the following described real property situated on and near Sheep Creek in the Harris Mining District, District of Alaska, to wit:

The Mexican Millsite U. S. Mineral Entry No. 25,

lot 71 B. The Belvedere Millsite U. S. Mineral Entry No. 25, lot 72 B. The Jumbo Millsite U. S. Mineral Entry No. 60, Lot No. 260. Also that certain piece or parcel of land beginning at a stake identical with post No. 2 of Jumbo Millsite, U. S. Survey No. 260 on the meander line of Gastineau Channel; thence first course along the meander line of Gastineau Channel at ordinary high water mark N. $52^{\circ} 00'$ W. 54 feet to stake No. 2; thence second course N. $48^{\circ} 15'$ E. 200 feet to stake No. 3; then S. $52.00'$ E. 54 feet to the N. W. side line of Jumbo Millsite U. S. Survey No. 260, 200 feet to stake No. 1, the place of beginning, containing an area of one-quarter of an acre more or less, courses expressed from the true meridian, Mag. Var. $29.30'$; and also that certain water right known as the Sheep Creek Water Right and located on Sheep Creek about three quarters of a mile from its mouth, together with the flume and pipe-line connecting the same with the beach near the mill at the mouth of the said Sheep Creek, also the sawmill, boarding house, lumber sheds, wharf landing, mill dam, flumes, penstocks, water-wheels, and all other machinery and appliances used in connection with said sawmill, situated near the mouth of said Sheep Creek, together with all machinery, tools, equipment, plants of every kind and description now upon said property for a term of ten (10) years from the date hereof at a monthly rental of One Hundred and Twenty-Five (\$125.00) Dollars per month; payable in gold coin of the United States on the first day of each month during the term of said lease, at the office of [1096] the

lessees at Treadwell, Alaska; and it is hereby agreed, that if any rent shall be due and unpaid, or if default shall be made in any of the covenants herein contained, that it shall be lawful for the lessor to re-enter said premises and remove all persons therefrom, and the lessees do hereby covenant, promise and agree to pay the lessor the said rent in the manner hereinbefore specified and not to let or underlet the whole or any part of said premises without a written consent of the lessor, nor to assign this lease or any part thereof without said written consent, and at the expiration of said term the party of the second part will quit and surrender said premises in as good state and condition as the same now are.

It is the intention of the lessees to erect, equip and maintain upon said premises a water-power plant of substantial size and efficiency for the generation of electric power, and if at any times after Two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse-power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the parties of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration

therefor the right to the use of the three hundred (300) electric horse-power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the lessor the sum of Twenty-Five Thousand Dollars (\$25,000.) in gold coin of the United States; and the lessor covenants and agrees upon tender of said sum of Twenty-Five Thousand Dollars (\$25,000) to execute and deliver such deeds of conveyance to the property herein leased as hereinbefore specified, excepting only as to the title to (1) the one quarter acre tract hereinbefore described and (2) the premises occupied and used by the existing wharf of the lessor, to both of which the lessor now asserts only possessory titles. The lessees may at their own cost and expense undertake to perfect the said titles and should lessee wish so to do the lessor shall lend all proper assistance in its power including the using of its name, and should the said titles be so perfected to the said premises or either of them, they shall become the property of the lessor and remain covered by this lease and subject to all the terms and conditions thereof.

The covenants herein contained shall be construed as running with the land and as a charge thereon, so that any successor or successors in interest to the lessor or lessees who may acquire any interest in and to the titles to the said land shall be bound by this conveyance in the same manner as if they had executed this agreement; and the lessees hereof may require at their option that the property herein

described be conveyed by the lessor to a responsible Trustee for the purpose of carrying out the terms of this agreement, or that deeds and conveyances covering the property herein leased be placed in escrow so as to insure delivery of the same if required under the provisions of any of the covenants of this lease.

If neither of the options herein provided for are accepted by either the lessor or the lessees then the property and rights herein described with all the improvements that are or that may be hereafter placed on the said premises shall be and become the property of the lessor. [1097]

The provisions herein as to the delivery of three hundred (300) horse-power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arise from operating and physical causes beyond its control.

In Witness Whereof, the parties hereto have hereunto set their hands and seals the day and year first above written."

The defendant corporations thereupon completed the power plant generating about 2,600 horse-power and on October 31, 1910, the Oxford Company, plaintiff's predecessor in interest, elected to take under the terms of the contract hereinabove set out the electric current therein mentioned and stipulated for in lieu of the monthly rentals and to convey by proper indentures the said property, likewise stipulated for, to the said defendants, which said convey-

ance was duly accepted (time for receiving the same waived) and the same was received by defendant corporation on or about April 22, 1911.

On June 1, 1912, the plaintiff corporation became the owner of the property and property rights of the Oxford Company in Southeastern Alaska, at which time it entered into the possession of all the said properties. And the assignment of the contract in question was given by the Oxford Company to the plaintiff corporation at the request and with the full knowledge and consent of the defendant corporations and which conveyance was recorded in the local recording office at Juneau on October 14, 1912. Thereafter on November 8, 1912, the plaintiff corporation requested the defendant corporations to comply with the terms of said contract, and provide the power therein expressly stipulated for, and the said defendants attempted to do so by providing a connection with the plaintiff's transmission lines and the defendants' power plant in a manner to deliver to the plaintiff corporation electrical current of sufficient volume and voltage to produce 300 electric horse-power and install at their said powerhouse an instantaneous circuit-breaker, which broke the current whenever the current exceeded the amount specified, as claimed by them in the contract. [1098]

The testimony shows that at the time the circuit-breaker was first installed it was set at about eighty (80) amperes and thereafter reduced to about sixty (60) amperes.

This suit resulted by reason of the contention of

the plaintiff corporation that it was not only not receiving, by reason of the installation of the instantaneous circuit-breaker, starting surges or peaks claimed to be necessary to the beneficial use of the 300 electric horse-power specified for in the contract, but it was not in fact receiving 300 electric horse-power.

The defendants, on the other hand, claimed that under the contract the plaintiff and its predecessor in interest were entitled to a current not to exceed 300 electric horse-power and therefore not entitled to starting surges or peaks; and second, that it was furnishing under the terms of the contract the stipulated electric current of 300 horse-power therein mentioned; that the instantaneous circuit-breaker set as theirs was at 60 amperes permitted the plaintiff corporation and its predecessor in interest to draw from the defendants' bus-bar at their Sheep Creek power plant 300 electric horse-power, as meant and expressed in the contract.

The questions necessary to the decision of this suit resolve themselves into two: Did the contract contemplate the defendants' furnishing to the plaintiff and its predecessor in interest starting surges or peaks in excess of 300 electric horse-power; that is, does the term *use* employed in the contract contemplate in connection with the surrounding circumstances of the contracting parties an intention that the defendants should furnish sufficient power to permit and entitle the plaintiff and its predecessor in interest to the beneficial use of 300 electric horse-power? [1099]

Secondly, Does the term 300 electric horse-power of and in itself contemplate in reference to the surrounding circumstances of the contracting parties at the date of the contract, as well as subsequently, real or apparent power; that is to say, did the contracting parties have in mind and take into consideration the power factor of the motors then installed or to be installed by the plaintiff and its predecessor in interest to utilize the electric current specified in the contract or did the contract contemplate unity power factor?

To the point raised by the demurrer that the questions involved by the pleadings and the evidence are not of equitable cognizance attention is first directed.

There is no question raised but that the contract is free from fraud and was entered into with all the facts open to and known by the contracting parties. The question alone is as to the remedy to be applied.

It cannot be said that in an action at law to be brought at different times during the term of this contract to recover in damages the difference in money, the value of a current claimed by the plaintiff, a denial by the defendants is adequate when the evidence shows conclusively that there is no other current available and that work had been planned by the plaintiff and was being prosecuted during all the times since this action was begun, which requires all the current called for under the contract in question, in connection with the development of a very comprehensive mining system.

It seems clear that the plaintiff's remedy, as contended for by defendants, is inadequate for the pro-

tection of its rights. Suits at law from time to time to recover damages for the refusal of the defendant corporations to furnish the full amount of current called for under the contract would not give the relief necessary to secure the plaintiff's rights, and it is highly [1100] problematical if the loss to plaintiff could be estimated in money damages with the least degree of accuracy or justice.

Franklin Telegraph Co. vs. Harrison, 145 U. S. 459.

This was an action for the specific performance of a contract, necessitating the defendants to maintain for the use of the plaintiffs an electric wire already installed upon the defendant's poles and the decree was granted.

A distinction is attempted to be made by the defendants in their brief herein between the facts of the above-cited case and the one here, the contention being that the parties there had occupied the same position for ten years, that is, the defendant had been required to maintain, and had maintained, the telegraph wire requested by the action to be maintained under injunctive relief; in other words, that the relief accorded was simply leaving the parties in *statu quo*.

The distinction, if any, seems more fanciful than real, since here the parties have no alterations to make of moment, if the plaintiff be entitled to an increased ampereage and starting surges, nor is personal service on the part of the defendants to maintain the current an objection to equitable relief demanded, since no different service is here required

than has been given by defendants heretofore in furnishing the present current.

All that is sought by the plaintiffs in this case is an alteration in the defendants' system employed to permit an increase in the amount of the current already supplied.

An analogous case is that of *Hendricks vs. Hughes et al.*, 23 So. 637, in which specific performance was prayed for the enforcement of a contract calling for the stipulated water-power necessary to operate a gin for a period of five years. Hughes had erected his gin and defendants had furnished the power. Hughes obtained it by means of a rope belt attached to the pulley shaft [1101] of defendant's sawmill. Defendant had started to erect a gin of their own in such a location as to prevent Hughes' connection with defendant's pulley. The relief demanded was held equitable in form and the injunction to restrain the erection of defendant's gin in the place contemplated by defendant was held proper.

In this case the relief demanded is the proper setting and use of electrical appliances "to prevent the destruction of contractual relations."

This action settles the rights of the parties under the contract once for all time. This is not only preventing multiplicity of suits to recover damages, endless litigation between the parties and their successors in interest, but it is also an adequate remedy which under the facts in this instance could not be compensated for in money damages.

Equity having jurisdiction to compel the necessary alterations in the defendants' system of supplying

the current under the contract, it follows the demurrer is overruled.

The contract is to be construed, if possible, in the light of the intention of the parties to the instrument as it appears, not only in the contract, but also from the evidence before the Court in so far as it shows the surrounding circumstances of the subject of the contract, the relationship of the parties as it existed at the time of the execution of the same; the object to be accomplished under the agreement; the use of the subject matter when discussed and known by both parties and the manner in which it was to be used.

First and most naturally we scan the language of the contract, and if its terms are unequivocal and no ambiguity exists, either in the words employed or in inconsistencies between different paragraphs with reference to the same subject matter, then the contract speaks for itself. [1102]

It is claimed that the failure to mention in the contract surges or peaks results that it was not contemplated at the time of the agreement, nor its use anticipated. The evidence leaves little doubt that the necessity of starting surges or peaks was not anticipated or thought of, at least at the time of the execution of the contract. It therefore follows that the first question under the issues must be decided upon the fact that neither party to the contract thought of or anticipated the necessity or use of the surge or peak, now acknowledged to be necessary to start the kinds of motors then in use at Sheep Creek, and which both parties would naturally expect would be employed to entitle and permit the plaintiff to

utilize the current contracted for.

That means the use of induction motors employed when a current of about 300 HP is being utilized for general mining purposes. Form K General Electric motors had been generally used in Alaska, and was naturally in the minds of the contracting parties at the date of the contract. At the time the contract was executed the machinery operated by the power at the Sheep Creek mines was not in operation, the Sheep Creek mines not being then worked and had not been for some time, yet it is apparent that both parties to the contract had in mind at that time the reservation of sufficient horse-power electric current on the part of the plaintiff's predecessor in interest to successfully operate the said property as a mine.

At that time there was still located on the Sheep Creek properties and formally operated there a thirty-stamp mill, two rock-crushers, two air-compressors, two hoists and about 100 electric lights.

While the situation of the plaintiff's predecessor in interest was that of one embarrassed about maintaining the title to the water-power in question, in that the law demanded the plaintiff's predecessor to continue to put to beneficial use the water at the Sheep Creek power plant, which might be at any [1103] time relocated by other interests, it was also a valuable asset to the defendants to obtain additional power there to generate electricity, to be utilized by them in their adjacent large mining operations in the vicinity where the water-power had been already largely developed and utilized.

No doubt under the testimony plaintiff's predecessor did not at the time of the contract so much in-

tend to operate the Sheep Creek mines with the electric current reserved under the contract as they hoped it would prove an asset and inducement in offering for sale their Sheep Creek property as a whole.

At any rate, there is no question but that the reservation of the 300 HP electric current was to enable the Sheep Creek properties as a mine to be successfully operated.

The parties first began the negotiations which resulted in the contract, Shackleford, Bradley and Taylor, at Juneau and Treadwell, Alaska, in August, 1909, L. P. Shackleford at that time representing the International Trust Company and afterwards the Oxford Mining Co., its successor in interest F. W. Bradley, Consulting Engineer of the defendant companies, in charge of their operations, construction and development in Alaska and H. H. Taylor, the then President of the defendant companies.

At that time these gentlemen were familiar with the machinery then situated on the Sheep Creek property, as well as the power necessary to operate the same and the purposes for which the machinery would be employed.

There is testimony that they estimated the power necessary to be reserved for the purposes of the plaintiff's successor in interest, to be not over 150 HP and they added 50 HP for good measure, estimating the amount of power to be reserved by the plaintiffs at 200 electric HP. However, Shackleford reserved the right to submit the amount of power to be reserved under the contemplated contract to his clients and with the tentative draft of

the contract and the letter from Bradley to Endicott about [1104] the same in his possession, he submitted the same to the officers of his corporations he then represented, in Boston, and the amount of 200 HP was not found by them sufficient or at least not satisfactory, and the telegram was sent to Bradley, in Idaho, that the tentative contract would be acceptable if 300 HP were inserted where the figures 200 HP then appeared.

At this point there was a meeting of the minds of the contracting parties on the subject matter now before the Court, and the only alterations made in the original draft of the contract prepared by Shackelford, Bradley and Taylor were the necessary changes of the term "200" to "300" wherever the former had been employed in the original.

To further follow the evidence, in order to ascertain the intention of the parties contracting for the electric current reserved under the contract, we revert to the following:

Bishop, formerly employed at the Sheep Creek mines, and power plant, testifies, that the power necessary to run the machinery situated on the Sheep Creek property when it was last operated prior to the contract shows that there was employed in the operation and development of the mines: 1 straight line air-compressor, 14-inch cylinder, 16 or 18 inch stroke; 1 duplex air-compressor, 16-inch cylinder, 16-inch stroke; 1 80 HP. Westinghouse 500 volt electric generator, direct current; 1 25 HP. Sprague 500 volt direct current generator and a 75 HP. Sprague generator.

At the mill was installed a 50 HP. C. & C. Motor, a 50 HP. Sprague motor, also a 25 HP. motor, which ran the rock-crushers.

These motors were employed to run a 30-stamp mill, rock-crushers, air-compressors, hoists and about 100 lights installed in and about the buildings and mine. [1105]

At the conference held by Shackelford with his clients in Boston at the time was one B. L. Thane, who was called into consultation by the plaintiff's predecessor and being familiar with the properties at Sheep Creek and the machinery situated thereon and its use, advised that 300 HP was necessary for its successful operation. Wallenberg, an electrical engineer employed by the plaintiff company, testifies that the amount of power required to run the machinery situated on the Sheep Creek properties in 1909 was as follows:

Running a mill of 30 stamps, 50 to 60 HP; 2 rock-crushers 25 HP; 100 lights 10 HP; 2 hoists 15 HP; 2 pumps 10 HP; the air-compressors 75 HP. That the power necessary to operate the equipment at the mines was as follows: For the use of the 2 air-compressors 165 HP; one generator 80 HP; 1-25 HP generator or 370 HP.

Kinzie, manager for the defendant companies in Alaska, at Juneau, testified that he was acquainted with the machinery on the Sheep Creek properties in 1909; that it could have been operated with a 200 HP current if proper machinery had been installed.

This leaves but one conclusion, and that is irresistible, that the parties to the contract knew at the

time of the execution of the contract that the machinery then on the Sheep Creek property could not be successfully run on a 200 HP electric current, without the aid of other machinery, that is, a different equipment than had been employed.

Mr. Kinzie's testimony, and he is corroborated by all the other witnesses called on the point, is that the General Electric Form K motor requires at least three or four times the starting surge it requires to operate its load, many of the witnesses testifying that it requires nine times the electric [1106] current to start such a motor that it does to operate it under its normal load.

It seems apparent that the parties to the contract had in mind when contracting for the current in 1909 the use of the usual machinery employed at Sheep Creek and similar means for the mining and development of such a property and the power necessary to operate the plant then at Sheep Creek and generally used in similar ventures.

There can be no doubt but that with the amount of power to be utilized and the purpose for which it was to be used a General Electric Form K motor was anticipated, it being the most popular and practical motor of the size to be employed in connection with the power or current and the motor requiring the least care and experience in operating it.

It is therefore to be concluded from the situation of the parties to the contract that it was their intention that the power to be reserved under the contract was for the purpose of operating the Sheep Creek properties, employing at least such power in its future

operations as had been employed in the past, and that the usual induction motors used in similar operations would also be employed here; that at least over 200 HP had been so employed and without the right under the surrounding circumstances to a starting surge the plant could not have been operated. The development in electrical starting appliances since 1909 must be taken into consideration when looking at the intention of the parties as portrayed in the contract of 1909.

Keeping in mind the machinery, kind, capacity and use to which it was to be applied, we now look to the terms of the contract for any assistance which may be afforded in reaching the intention of the parties to the contract.

The first expression employed by the parties standing alone limits the current to "a current of not to exceed three [1107] hundred (300) electric horsepower."

The next expression employed in the same instrument to express what was in the minds of the contracting parties is the "right to use the three hundred (300) electric horse-power hereinbefore mentioned." The *express* "three hundred (300) horse-power hereinbefore mentioned" is a current not to exceed 300 electric HP, so the term "use" does not in any way add necessarily to the amount of the power or limit to a current not to exceed 300 electric HP.

But the term "use" is significant if it means, as is contended for by the plaintiff, the beneficial use of 300 electric HP, limited to a current not to exceed 300 electric HP, when the facts show that, employing the

usual form of motors starting them unloaded under the usual conditions, with the ordinary aids and auxiliaries that not more than one-third of the power contracted for could be beneficially employed at the Sheep Creek mines, in the absence of a starting surge of momentary duration, being furnished by the defendants.

Aside from the intentions of the contracting parties as shown by the testimony the well-known principle is involved in the construction of grants "that whoever grants a thing is deemed to grant that without which the grant itself would be of no effect."

True, the rule applies only to such things as are incident to the grant and directly necessary to the enjoyment of the thing granted.

Assuming the beneficial use of 300 electric HP to have been the object and the intention of the parties to the contract, then no stretch of logic or of the imagination is necessary to find the starting surge a thing incident to the grant in this case and of so much importance that for all [1108] practical purposes it would render the grant of 300 HP ineffectual, in that without the starting surge the 300 HP could not at best begin to furnish the necessary power to operate the Sheep Creek properties.

True, another side to the question presents itself, why not assume, quite as consistently, not that the defendants should provide a starting surge, but that the plaintiff provide different machinery, other motors or auxiliaries in connection with their motors, which would permit them to start with little additional power to that required to carry their load.

The answer is that under the testimony the General Electric Form K motor is the motor most generally in use and must have been anticipated by the parties. Thus, the Form K motor is used for the work here contemplated to the exclusion of other forms of motors and the testimony is conclusive that the ordinary and usual auxiliaries known in 1909 are employed to aid the starting of the plaintiff's Form K motor of 200 HP now installed and which the current under the contract was being used to operate.

So it cannot be reasonably asserted that such methods were anticipated or could have been anticipated by the parties in 1909.

Again, the equities of the case—To give the plaintiff the use of a current not to exceed 300 HP the defendants have a plant of about 3000 HP capacity, from which, at infrequent periods at the most, they would be obliged to provide a momentary surge, the actual value of which is less than five cents for each surge supplied the plaintiff; taking into consideration the large amount of current generated by the defendants at the Sheep Creek power plant and the character of the current required and the length of duration of the surge, it does not impress the Court that it [1109] can work the least hardship to the defendants' lines or operations, and that alterations or additions are not necessary on the defendants' part to give this necessary and incidental grant to the plaintiff, except that instead of employing the instantaneous oil circuit-breaker as now, a time relay circuit-breaker must be installed at defendants' power-house, which will permit the plaintiff to start

their motors by the aid of momentary surges.

Turning to the second question—

What is meant by the terms, “The use of an uninterrupted current of not to exceed 300 electric horse-power”? Does it mean, under the language of the contract and the surrounding circumstances attending the parties in 1909, real or apparent electric horse-power?

In other words, assuming the current at defendants’ bus-bar at Sheep Creek to be of the following elements—a voltage maintained at 2300; an alternating current there phased—how many amperes are the plaintiffs entitled to—56 as claimed by defendants, on the assumption that unity power factor was intended under the contract, or 82 as alleged by the plaintiff, claiming the amount of amperes should be regulated at all times by the power factor existing on plaintiff’s circuit, depending upon the machinery employed by them and its load at maximum capacity.

It is claimed that unless the actual power factor is given consideration in this matter by the Court, the plaintiffs suffer injury, and the defendants are not furnishing 300 electric HP uninterrupted for the use of the plaintiffs. That if the power factor of the plaintiff’s machinery is at less than unity, then the defendants would not be furnishing, nor would the plaintiffs be permitted to use, 300 electric HP, and the amount thus not furnished by defendants and not employed by the plaintiff, would still be enjoyed by the defendants—that is to say, if the power factor of plaintiff’s motors is but 72 instead of [1110] unity and the defendants furnish a current with a current-

breaker set at 56 amperes, the defendants fail to supply the 300 HP, in that they are retaining and enjoying a current represented by the difference between 56 amperes and 80 amperes and the plaintiff deprived of its use.

Here the contention is made that the defendants are not at fault if the plaintiff cannot beneficially enjoy 300 HP, when a current of 56 amperes, impressed at a constant voltage of 2300 is furnished by them at their bus-bars at the Sheep Creek power plant. That by the plaintiff corporation installing a synchronous motor at their plant, or by using all the current for electric lights, it could and would be enabled to use and beneficially enjoy all the electric current of not to exceed 300 HP, when the circuit-breaker is maintained at 56 amperes. Of course, no account is here taken of line and transformer losses, etc., since by the terms of the contract the current is to be furnished by defendants and taken by plaintiff at the bus-bars of the defendants, at the defendants' power house at Sheep Creek.

The answer to this contention is twofold: First, That the use to which the current was to be applied was never anticipated, by the contracting parties or any of them, to be alone for electric lights, at least to but a small proportion of the amount of the 300 HP. Secondly. The parties to the contract could not have had in mind that the 300 HP current would be utilized by plaintiff by installing a synchronous motor. Under the evidence, the use of such a motor is not practicable under the circumstances of this subject matter, for the reason that such a motor is

not only an expensive machine when employed to utilize a current of not to exceed 300 HP, but it is a motor of intricate parts and probably would be more difficult in operation [1111] when installed in connection with the use to which the current under the contract was to be applied, that is, in mining operations. The synchronous motor is a machine employed generally to bring to unity the power factor of motors of much larger capacity than here required by the plaintiff to utilize their current of 300 HP and seldom, if ever, employed on a current of 300 or less horse-power.

It then follows that the parties must have had in mind a power factor of less than unity and the defendants were to do and intended to do one of two things, either furnish an electric current of not to exceed 300 HP on the assumption that the plaintiff would not use in fact 300 HP or that they would furnish 300 HP as a matter of fact, taking into consideration the power factor at all times of the plaintiff's machinery and the use to which they might put the current supplied.

It does not seem reasonable that the parties intended that the defendants supply less than the amount specified. But it is contended that to furnish in fact 300 HP would work an undue hardship on the defendants, in that the means to secure knowledge of the actual power utilized by the plaintiff would be under the control of the plaintiff, and even then, would require constant changes in the time relay circuit-breaker, in order to prevent the plaintiff getting more than the 300 HP.

The evidence is conclusive that the wattmeter is the proper instrument to measure electric currents; that with a constant voltage maintained as is done at defendants' Sheep Creek power plant at 2300 volts, with a curve reading wattmeter and an ammeter there installed, the defendants can with no difficulty confine the current to 300 HP, based upon the actual power factor on the plaintiff's line, when the plant at plaintiff's end of the line is running under its normal load at any stated time. [1112]

It follows that the means of ascertaining the exact power factor of the plaintiff's circuit can be ascertained at its power-house instantly by the employment near its bus-bar on the plaintiff's line of the usual and ordinary instruments for recording electric currents, and they may with precision fix that amount at 300 electric HP.

The evidence shows that the amperage necessary to furnish 300 electric HP, real as distinguished from apparent electric horse-power, was first anticipated by the defendants, in that its circuit-breaker when it began furnishing the current to the plaintiff was set at something over 80 amperes, and also that it had ordered and intended to use on plaintiff's line a curve reading wattmeter, an indication, however important or otherwise, showing how the defendants construed their obligations under the contract before this suit arose, at the very inception of furnishing electric current under the contract to plaintiff herein.

The testimony of the witnesses for both parties discloses the fact that the use of the automatic, instantaneous circuit-breaker on the plaintiff's line at the

bus-bar of the defendants' power-house at Sheep Creek has resulted in several undue interruptions in plaintiff's operations of its motor at its mines, where a 200 HP induction motor is employed.

Whenever the motor has been necessarily stopped since the amperes have been reduced to 56, it has been impossible for plaintiff to start the same though detached from its load and the ordinary auxiliaries attached to the motor. At such times the defendants have insisted that the manager of defendants' companies at the offices in Treadwell be notified before the person in charge at all times at the power plant at Sheep Creek be permitted to replace or throw in place again the said circuit-breaker. In many instances this delay occurring during the [1113] night has resulted in the circuit-breaker being left out for a period of from one to eight hours, at a time when plaintiff's force of men were on shift and leaving the mine and buildings in total darkness, as well as rendering necessary the cessation of work of all machinery in the mine whose motive power is the electric current in question.

It is apparent that the uninterrupted use of 300 HP is not being furnished nor enjoyed when a 200 HP motor of the type and build installed by plaintiff cannot be operated under the conditions hereinbefore set out, and it seems patent that the parties did intend the current specified in the contract should start, run and operate at least a 200 HP motor of the General Electric Form K.

The depositions of several men of reputation in the electrical engineering world appear in the testi-

mony. Necessarily, their testimony is confined to the questions propounded in the interrogatories which in some instances were not formed in a manner to assist the Court in arriving at the issues in the action.

But they all agree that the proper unit in the measurement of electrical current is the watt, and that the wattmeter is the proper instrument to record actual electric horse-power; that an ammeter in connection therewith enables the operator to so set a circuit-breaker as to deliver without any trouble or inconvenience the actual horse-power called for in the contract.

The possibility of accident to the defendants' plant at Treadwell, which is operated in part by the same circuit as the plaintiff's mines, a difference of opinion appears among these learned men, but the fact remains that the defendants' companies furnished a similar amount of current to one of its allied branch mining companies, a few miles distant from the Sheep Creek mines, during the past winter, and had installed [1114] a time relay circuit-breaker, without injury.

To the direct question propounded to the experts what power factor would be implied in a contract, silent on the subject, calling for the use of an uninterrupted current of three hundred horse-power, the majority of the answers were unity power factor.

And it may be said, were not the intentions of the parties disclosed aside from the terms of the instrument, such a conclusion would be the correct one, but since the subject of the action is to determine the very intention of the parties to the contract, when such in-

tention is patent, not only in the language employed in the contract, but by viewing the subject matter, putting one's self in the place of the contracting parties, at the inception of the contractual relations, then the additional light thus shed on the question must be given due weight.

Findings of fact and conclusions of law may be prepared, and a decree will be entered in accordance therewith.

Dated at Valdez, Alaska, this 5th day of June, 1913.

PETER D. OVERFIELD,
District Judge. [1115]

*In the District Court for the Territory of Alaska,
Division No. 1, at Juneau.*

Case No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,
Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corpora-
tion, ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants.

Motion for New Trial.

Come now the defendants in the above-entitled cause and respectfully move the Court to grant a new

trial, for the reason that the evidence is insufficient to justify the decision, and that it is against the law, for the reason that the Court erred in refusing to receive evidence offered on behalf of the defendants to the fact that the plaintiff had not complied with the contract, to which exception was duly and regularly taken at the time of the trial, and for the further reason that the Court erred in refusing to permit the defendants to amend their answer relative to noncompliance of the contract by the plaintiff, to which exception was duly and regularly taken by the defendants on the trial.

Dated this 12th day of June, A. D. 1913.

HELLENTHAL & HELLENTHAL,

Attorneys for Defendants.

[Endorsed]: Original. No. 968—A. In the District Court for the Territory of Alaska, Division No. 1. Alaska Gastineau Mining Company, a Corporation, Plaintiff, vs. Alaska Treadwell Gold Mining Company, a Corporation, and Robert A. Kinzie et al., Defendants. Motion for New Trial. Hellenthal & Hellenthal, Attorneys for Defendants. Office: Juneau, Alaska. Filed June 12, 1913. E. W. Pettit, Clerk. By H. Malone, Deputy. [1116]

In the District Court for the District of Alaska, Division No. One, at Juneau.

THE ALASKA GASTINEAU MINING COMPANY, a Corporation,

Plaintiff,

vs.

ALASKA TREADWELL GOLD MINING COMPANY, a Corporation, ALASKA UNITED GOLD MINING COMPANY, a Corporation, ALASKA MEXICAN GOLD MINING COMPANY, a Corporation, and ROBERT A. KINZIE,

Defendants.

Praecipe [for Transcript of Record].

To the Clerk of the District Court for the District of Alaska, Division Number One.

You will please prepare a transcript of the record in the above-entitled cause and transmit the same to the Circuit Court of Appeals for the Ninth Circuit, to be used in the hearing of the appeal herein, said transcript to include a copy of the complaint, a copy of the demurrer filed to the complaint by the defendants, a copy of the answer of the defendants, and a copy of the reply filed by the plaintiff, a copy of the bill of exceptions, a copy of the petition of appeal and order allowing the same, a copy of the assignment of errors, a copy of the writ of supersedeas, a copy of the supersedeas and cost bond, a copy of the citation on appeal together with the acknowledgment of service thereon by the appellee, a copy of the opinion

of Judge Peter D. Overfield rendered herein, a copy of the motion for new trial together with the original citation, all of which is to be prepared with the view of transmitting the same to the United States Circuit Court of Appeals for the Ninth Circuit, in connection with the appeal herein, within the time limited by the rules [1117] of that court.

HELLENTHAL & HELLENTHAL,

J. A. HELLENTHAL,

S. HELLENTHAL,

Attorneys for Alaska Treadwell Gold Mining Co.,
Alaska United Gold Mining Co., Alaska Mexican
Gold Mining Co. and Robert A. Kinzie.

[Endorsed]: Original. No. 968—A. In the District Court for the Territory of Alaska, Division No. 1. Alaska Gastineau Mining Company, a Corporation, Plaintiff, vs. Alaska Treadwell Gold Mining Co., a Corporation et als., Defendants. Praeceptum. Hellenenthal & Hellenenthal, Attorneys for Defendants. Office: Juneau, Alaska. Filed in the District Court, District of Alaska, First Division. Aug. 9, 1913. E. W. Pettit, Clerk. By —————, Deputy. [1118]

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

No. 968—A.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Plaintiff and Appellee,

vs.

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corpora-
tion, ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Defendants and Appellants.

Certificate [of Clerk U. S. District Court, etc.].

I, E. W. Pettit, Clerk of the District Court for the District of Alaska, Division Number One, do hereby certify that the foregoing and hereto attached eleven hundred eighteen pages of typewritten and other matter, numbered from one to eleven hundred eighteen, both numbers inclusive, constitutes a full, true and correct copy of the record, and the whole thereof, prepared in accordance with the praecipe of the appellants, filed herein and made a part hereof, in cause No. 968—A, entitled Alaska Gastineau Mining Company, a Corporation, Plaintiff and Appellee, vs. Alaska Treadwell Gold Mining Company, a Corporation, Alaska United Gold Mining Company, a Corporation, Alaska Mexican Gold Mining Company, a

Corporation and Robert A. Kinzie, Defendants and Appellants;

I do further certify that the said record is by virtue of the order allowing appeal and the citation issued herein and made a part hereof, and the return in accordance therewith;

I do further certify that the said record has been prepared by me in my office, and the costs of preparation, examination, and certificate, amounting to six hundred thirty-nine and 35/100 (\$639.35) dollars, will be paid to me by Messrs. Hellenthal and Hellenthal, attorneys for the defendants and appellants.

IN WITNESS WHEREOF I have hereunto set my hand and affixed the seal of the above-entitled court this 21st day of August, 1913.

[Seal]

E. W. PETTIT,

Clerk of the District Court for the District of Alaska,
Division Number One. [1119]

[Endorsed]: No. 2311. United States Circuit Court of Appeals for the Ninth Circuit. Alaska Treadwell Gold Mining Company, a Corporation, Alaska United Gold Mining Company, a Corporation, Alaska Mexican Gold Mining Company, a Corporation, and Robert A. Kinzie, Appellants, vs. Alaska Gastineau Mining Company, a Corporation, Appel-

lee. Transcript of Record. Upon Appeal from the United States District Court for the District of Alaska, Division No. 1.

Received and filed August 28, 1913.

F. D. MONCKTON,
Clerk of the United States Circuit Court of Appeals
for the Ninth Circuit.

By Meredith Sawyer,
Deputy Clerk.

*In the District Court for the District of Alaska,
Division No. 1, at Juneau.*

*In the United States Circuit Court of Appeals for
the Ninth Circuit Holden at San Francisco.*

ALASKA TREADWELL GOLD MINING COM-
PANY, a Corporation, ALASKA UNITED
GOLD MINING COMPANY, a Corpora-
tion, ALASKA MEXICAN GOLD MINING
COMPANY, a Corporation, and ROBERT A.
KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY,
a Corporation,

Appellee.

**Order [of District Court Directing That Appeal be
Heard at September, 1913, Session at Seattle,
Washington].**

This matter having come on upon the application
of the defendants and appellants above named for

an order staying the execution of the final decree herein pending appeal, plaintiffs appearing by their attorneys, Messrs. Hellenthal & Hellenthal, and the defendant appearing by its attorneys, Messrs. Shackleford & Bayless and Z. R. Cheney, and objecting to supersedeas herein, which objection was by this Court overruled, and it appearing to the Court, however, that the plaintiff and appellee is entitled to a speedy determination of this cause, in view of the request of the appellants that the final decree be stayed;

IT IS NOW THEREFORE ORDERED that the appeal in this case be heard before the United States Circuit Court of Appeals at its September, 1913, session at Seattle, Washington, instead of at San Francisco, California, and that the record in this case be made up with necessary speed to accomplish that purpose.

Done in open court this 8th day of August, 1913.

FRED M. BROWN,

Judge.

[Endorsed]: No. 2311. United States Circuit Court of Appeals for the Ninth Circuit. Order that Appeal be Heard During September, 1913, Term at Seattle, Washington. Filed Aug. 18, 1913. F. D. Monckton, Clerk.

No. 2311

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IN THE
United States Circuit Court of Appeals
FOR THE NINTH CIRCUIT.

ALASKA TREADWELL GOLD MINING COMPANY,
a Corporation;

ALASKA UNITED GOLD MINING COMPANY, a Cor-
poration;

ALASKA MEXICAN GOLD MINING COMPANY, a
Corporation; and

ROBERT A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING COMPANY, a Cor-
poration,

Appellee.

BRIEF OF APPELLANTS.

HELLENTHAL & HELLENTHAL,
Attorneys for Appellants.

CURTIS H. LINDLEY,
Of Counsel.

Filed this.....day of October, A. D. 1913.

.....Clerk.

By....., Deputy Clerk.

THE JAMES H. BARRY COMPANY
SAN FRANCISCO

FILED

OCT 1 - 1913

IN THE
United States Circuit Court of Appeals
FOR THE NINTH CIRCUIT.

ALASKA TREADWELL GOLD MI-
NING COMPANY, a corporation;

ALASKA UNITED GOLD MINING
COMPANY, a corporation;

ALASKA MEXICAN GOLD MI-
NING COMPANY, a corporation;
and

ROBERT A. KINZIE,

Appellants,

vs.

ALASKA GASTINEAU MINING
COMPANY, a corporation,

Appellee.

BRIEF OF APPELLANTS.

This is a suit in equity brought by the appellee against the appellants to compel the specific performance of a contract.

It is alleged in the complaint that in the month of October, 1909, the appellants, defendants below, entered into a contract with the plaintiff's predecessor in

interest, the Oxford Mining Company, under which the Oxford Mining Company gave the appellants a lease of certain property rights situate on and near Sheep Creek, Alaska, including certain mill sites and other tracts of land, as well as a water right referred to as the Sheep Creek water right. The contract provided that it was the intention of the appellants to erect, equip and maintain upon the leased premises a water power plant of substantial size and efficiency for the generation of electric power, and that if at any time after two years from the date of the contract the lessor or its assigns should elect to take "*a current of not to exceed 300 electric horse power*" which, it was provided, *should be taken from and at the generating plant to be installed upon the leased premises*, the appellants should furnish such current to the lessor upon the execution of deeds conveying all the leased property referred to in the lease; it was further provided if prior to the expiration of nine years from the date of the lease the lessor did not elect to convey the leased property and accept in full consideration therefor "*the right to the use of the 300 electric horse power*" previously mentioned in the contract, the appellants might at their option purchase the leased property outright upon the payment of \$25,000.00. The contract contains other provisions that are not material to this controversy.

The complaint then avers that the Oxford Mining Company elected to take the electric current provided

for in the contract and made the conveyance of the leased premises as in the contract stipulated; that the appellee became the successor in interest of the Oxford Mining Company and notified the appellants of that fact, which notification was accompanied by a request to deliver the current provided for to the appellee.

It is further alleged that on the 6th day of December, 1912, the appellants so set an automatic instantaneous circuit breaker installed upon the appellee's circuit that the same would go out if a current in excess of 56 amperes were drawn.

It is then alleged that the instantaneous circuit breaker installed by the appellants is not a proper or usual device to be applied in cases of this kind, and that the appellants should install in its place a thirty-second time relay circuit breaker so as to enable the appellee to draw such starting currents in excess and addition to the 300 electric horse power for which the contract in terms provides, for such short periods of time as may be necessary to start machinery requiring 300 horse power to operate when duly started.

It is then averred in the complaint that in providing current under the contract the appellants have estimated the same upon the basis of a *unity power factor* and were making available for appellee's use a current calculated upon that basis; that the power factor actually upon the appellee's circuit was at all times less than 85% and at some times, especially when the

machinery was being started, very much less than 85% of the power factor of the circuit.

It is then averred that a watt meter should be installed by the appellants upon the appellee's circuit; and further, *that it is customary to furnish starting currents or surges in addition to the flow of current contracted for.*

It is further averred that the appellee is using this power in carrying forward development work at its mines, and that it would suffer irreparable injury unless a court of equity takes cognizance of the controversy; that this is necessary to avoid a multiplicity of suits, and that the appellee is without plain, speedy or adequate remedy at law.

The prayer asks for specific performance of the contract, and in effect asks that the contract be so construed and enforced as to compel the appellants to furnish the appellee with current sufficient to enable it to develop 300 mechanical horse power at all times, regardless of the power factor, at which appellee's machinery may from time to time operate, and in addition to this that the appellee be furnished with starting currents unlimited as to quantity whenever it may desire to start its machinery.

The complaint was demurred to on the ground, among others, that the appellee had a plain, speedy and adequate remedy at law, and on the further ground that the court of equity had no jurisdiction to grant the relief demanded.

The demurrer was overruled by the court, and the appellants given an exception to such ruling.

The appellants then filed their answer and alleged, among other things, the execution of the contract of October, 1909, and the execution of two subsequent contracts bearing date of April, 1911, both relating to the subject matter in dispute.

The appellants then averred that they complied with the agreements entered into on their part and constructed a power plant having a capacity of approximately 2600 electric horse power, which plant it was averred was erected and completed within the time limited by the contracts, and further, that from and after the date of the completion of said plant the appellants had always been ready and willing to furnish and make available for the use of the Oxford Mining Company and its successor a current of 300 electric horse power as referred to in the contracts; that no demand was made upon them for current until the time referred to in the complaint and that from and after that time they had made available for the use of the Oxford Mining Company and the appellee, as its successor, an electric current of not to exceed 300 electric horse power, in full compliance with the contract; that the appellant corporations had installed at the Sheep Creek power plant on the circuit of the appellee an automatic circuit breaker which would break the circuit whenever a current in excess of 300 electric horse power was drawn, and that said circuit

would not be broken by said circuit breaker unless such excessive current were drawn; further, that such circuit breaker so installed is a common appliance in general use in connection with the distribution of electric current, and is the only appliance which could be installed or maintained by the appellants to protect themselves against *short circuits* occurring on the line of the appellee, and against attempts on the part of the appellee to draw from the bus bars at the appellants' plant electric current in excess of 300 electric horse power.

It is further alleged that the appellant corporations are owners of large and extensive mines, generally known as the Treadwell Mines on Douglas Island; that the current generated at the Sheep Creek plant is used in the operation of these mines, and that unless an automatic circuit breaker is maintained to protect the system against *short circuits* and incoming *peaks* the damage done to the plant of the appellant corporations, and especially to the cyanide plant by such *short circuits and incoming peaks*, would be both large and incalculable; and further, that the water supply in Sheep Creek is at times very low, and was, at the time of the filing of the answer, so low that the total current generated did not exceed 500 electric horse power, so that if a starting current of more than 200 electric horse power in addition to the 300 electric horse power stipulated were drawn, the same would have to be sup-

plied from the appellants' general supply of electricity produced at other generating plants.

That the appellants had complied with all the terms of the contracts set up on their part and were ready and willing to furnish the appellee with a current of not to exceed 300 electric horse power as provided for in the contracts, and were providing such a current at the time of the commencement of this suit; that the appellants and each of them are solvent, and that the appellee has a plain, speedy and adequate remedy at law, and that the court of equity is without jurisdiction to grant the relief demanded.

The affirmative allegations of the answer were put in issue by a reply.

Upon the trial, the contract plead in the appellee's complaint, as well as the two additional contracts plead in the appellants' answer, were offered and received in evidence. It was shown that the appellants were, at the time the complaint was filed, making available for the use of the appellee, at the generating plant, a current of approximately 60 amperes with a voltage of 2300 impressed, the circuit being a three phase circuit; it was further shown that this current was of 300 electric horse power, that 300 mechanical horse power could be developed from the current so made available, and that the apparatus employed would permit the uninterrupted flow of such a current.

It further appeared in evidence, however, that the appellee had installed upon its circuit a motor of the

induction type, and that the use of this type of motor resulted in a *phase displacement* by reason of which the power factor of the circuit was reduced to less than 100%, that is to say, the mechanical power actually developed by means of this type of motor was less than the electric power in the circuit. That this result would follow from the use of motors of the induction type, unless a synchronous condenser, a device employed for correcting the phase displacement caused by the use of the induction type of motor, were placed upon the same circuit, or unless a synchronous motor, which would answer the same purpose, were placed upon the circuit. In this connection it was further shown that if a synchronous motor were installed, or if the motor installed were supplied with a synchronous condenser, 300 mechanical horse power could be developed from the current furnished at appellee's operating plant.

It further appeared that the appellee transmitted the current furnished to the Perseverance Mine, a considerable distance away from the generating plant, and that the long transmission wires so employed necessarily increased the phase displacement and accordingly reduced the power factor of the circuit.

In this connection it was shown that the power factor of any circuit depends entirely upon the length of the transmission lines, the transformers used, and the type of motor or motors employed in converting the electric power into mechanical power. In other words, that whenever an electric current is not *in phase* the

phase displacement is the result solely of the manner and place of use and the apparatus employed in developing the electric power into mechanical power. (See evidence Thane, Rec. p. 155; evidence Wallenburg, Rec. p. 286, 292; evidence Kinzie, Rec. p. 506; evidence Proebstil, Rec. p. 360; evidence Kennedy, Rec. p. 449, 452; see deposition Quinan, p. 609; Grambs, p. 620; Cory, p. 819, 820; Hunt, p. 892; Davis, p. 857; Heise, p. 930; Quinn, p. 964.)

It further appeared in evidence that the motor installed by the appellee was a squirrel cage motor of the induction type. This, it was shown, is the simplest form of motor manufactured and requires a larger starting current than any other type or form of motor in general use. It was shown that the starting current required by this motor was approximately from three to five times its running current. (See evidence Kinzie, Rec. p. 514; Proebstil, Rec. p. 374; Kennedy, Rec. p. 458.)

It was also shown that if the load were taken off from the motor at the time of starting, or if the motor were supplied with proper starting devices in general use, no starting current in addition to the running current would be required by this or any other type of motor, and that a starting current was only necessary where the motor was started under full load conditions and was not supplied with proper starting devices. (See depositions Cory, p. 821; Quinn, p. 965, 966; Heise, p. 931; Davis, p. 860, 861; Hunt, p. 895.)

In addition to offering in evidence the contract of October, 1909, appellee called the witnesses Shackelford, Wallenberg, Bishop and Thane, with a view of proving the negotiations had between the parties which led to the execution of the contract of October, 1909, and in addition to the testimony of these witnesses, offered in evidence letters and telegrams that passed between the parties in connection with these negotiations, all of which evidence so offered was admitted by the court over the objection of appellants. (See evidence Shackelford, Rec. p. 101-107; Wallenberg, Rec. p. 240; Bishop, Rec. p. 252; Thane, Rec. p. 118.)

Appellants offered to prove by the witness Proebstil, an electrical engineer, the meaning of the phrase "a current of electricity of not to exceed 300 electric horse power," this being the phrase employed in the contract of October, 1909. The purpose of the testimony so offered was to prove the technical meaning of the language employed by the contracting parties. Appellee made objection to the admission of this evidence and this objection was sustained by the court and the evidence so offered was not admitted. (See evidence Proebstil, Rec. p. 364.)

Appellants also offered to prove by the witness Kinzie that neither the appellee nor its predecessor in interest had complied with the terms of the contract on its part. This testimony was also objected to by the appellee, and such objection was thereupon sustained by the court and the evidence was not admitted.

In connection with this offer of testimony it was suggested that appellants should have pleaded non-performance more definitely in their answer, whereupon the appellants asked leave of court to amend their answer in that regard, which leave was denied by the court. (See evidence Kinzie, Rec. p. 523.)

Appellants also proved by the witness Kinzie that the contract referred to as the "Gilbert Contract," the same being the contract with reference to which one of the contracts between the Oxford Mining Company and the appellants bearing date of April 22, 1911, was made, pleaded in the answer as the third contract and received in evidence by the court, was still outstanding, and that no settlement or adjudication was had between the parties in regard to the same. (See evidence Kinzie, Rec., p. 495.)

The court made its findings, and found that the contract of October, 1909, as well as the two contracts of April 22, 1911, were executed between the appellants and the Oxford Mining Company, and that the plaintiff was the successor in interest to the Oxford Mining Company.

The court also found that certain negotiations were had between the parties which led to the execution of the contract of October, 1909, and that in that connection certain correspondence was had and certain representations were made, all of which is fully set up in the findings.

The court then further found that it was the inten-

tion of the Oxford Mining Company and of the appellant companies to furnish to the Oxford Mining Company the "beneficial and uninterrupted use of 300 actual horse power," including such starting surges as might be necessary to start motors of the induction type, which the court found to be motors in general use in connection with mine operations, that the use of such motors was in contemplation of the parties at the time of the execution of the contract, and further that the power contracted for was 300 actual horse power, as distinguished from 300 apparent horse power.

All these findings of the court in relation to the intention of the parties were based upon the testimony of witnesses Shackleford, Wallenberg, Bishop and Thane, and the correspondence between the parties, all which testimony and correspondence related to the negotiations had, which were subsequently merged into the written contract. This testimony and correspondence was received over the objection of appellants.

The court further found that the appellants made available for the use of the appellee a current of about 60 with a voltage of 2300 impressed; and had installed an automatic instantaneous circuit breaker which limited the amount of current that could be taken to the current thus made available.

The court further found that the appellee had installed a motor of the induction type which had an inherent phase displacement and operated at a power

factor of less than 100% and that for that reason the appellee could not develop by means of such motor 300 actual mechanical horse power from the current made available for its use.

And further that a starting current in excess of the running current was required by the motor so installed by the appellee and that such additional starting current could not be drawn from the generating plant of the appellants because of the fact that an instantaneous circuit breaker had been installed. In this connection the court found that it was the duty of the appellants to furnish the appellee a current of sufficient amperage and voltage to enable it at all times to develop 300 actual mechanical horse power without in anywise restricting the appellee in regard to the manner or place of use, or in regard to the apparatus to be employed in developing the current into mechanical power. And the court found it to be the duty of the appellants to install a watt meter on the circuit of the appellee, which is a device designed to measure the quantity of power developed without reference to the quantity of current furnished and to so adjust its circuit breaker that the current furnished would at any and all times be such that the watt meter so installed would indicate the fact that 300 mechanical horse power was actually being developed by the appellee from the current furnished.

In addition to this the court found that it was the duty of the appellants to substitute the time relay circuit breaker in place of the instantaneous circuit break-

er and thus enable the appellee to draw starting currents at any and all times unlimited as to quantity.

The court also found that the appellee was doing development work practically as pleaded in the complaint, and had made calculations upon using the current to which it was entitled under the contract sued upon in connection with the doing of this development work, and that unless it were furnished with this current this work would be delayed and damage result.

Based upon these findings the court concluded first, that the appellee had a right to specific performance of the contract; second, that the appellee was entitled to the "actual and beneficial use of an uninterrupted current of 300 real horse power"; third, that the appellee was entitled to "reasonable surges of power necessary in starting ordinary apparatus used in connection with mining so that an uninterrupted and normal current of 300 actual horse power might be continuously used for the starting of such machinery"; fourth, the court further concluded that the contract contemplated and referred to the use of real power and that the appellee should be permitted to take starting surges. The court then concluded as follows: that "the defendant companies (appellants) so arrange their connection with the power line of the plaintiff company (appellee) that in addition to said starting surges the plaintiff company (appellee) be enabled to draw 300 actual horse power uninterruptedly in their operations, and that the apparatus

“and devices installed by the defendants (appellants) for the purpose of maintaining a circuit with the plaintiff (appellee) be set and regulated according to approved watt meter readings so that the circuit will not be interrupted except when more than 300 actual horse power according to watt meter readings is being taken by the plaintiff (appellee) of the defendant company (appellants).”

The court further concluded “that the plaintiff (appellee) was entitled to have established upon the connection of the plaintiff (appellee) with the defendant companies (appellants) at the switch board at the power plant of the defendant companies (appellants) situate at Sheep Creek, a thirty second inverse time relay circuit breaker so as to provide for ordinary overloads necessary to starting surges.”

The court thereupon entered a decree indefinite in its terms, requiring the appellants to install upon the appellee’s circuit a watt meter and a time relay circuit breaker and apparently to furnish the appellee with a current not from which it *can* develop 300 actual horse power, but from which it *will*, by the use of any devices and apparatus it may see fit to install, at all times develop 300 actual horse power; and further, to furnish the appellee with such starting currents in addition to the running current to be furnished as it may desire to draw at any and all times.

The uncertainty of the terms employed in the decree make it impossible to determine exactly what is

meant, but the above appears to have been the intention of the court. The many uncertain features of the decree will be discussed when the decree itself is being considered.

ERRORS ASSIGNED AND RELIED UPON FOR A REVERSAL.

The first error assigned relates to the action of the trial court in overruling the demurrer to the complaint, which demurrer was based upon the ground, among others, that the contract sued upon was not such a contract as could be specifically enforced, and that the court of equity had no jurisdiction in the premises.

The second error assigned relates to the admission of testimony. The witness Shackleford testified (Record Vol. 1, pp. 99-112), over the objection of appellants, that in the month of August, 1909, he, acting as the representative of the predecessor in interest of the appellee, and Mr. Bradley, acting for the appellants, had certain negotiations which led to the execution of the contract of October, 1909. The witness testified, among other things, that Mr. Bradley then represented to him that he was willing to insure to the International Trust Company and the parties interested in their property or in the Sheep Creek Mines, sufficient power to operate the Sheep Creek Mines, and that he, the witness, then told Mr. Bradley that he thought a contract along those lines giving adequate power for the operation of the mines might meet with

the approval of the Boston bondholders and of the Trust Company. He said that Mr. Bradley estimated that at least 150 horse power would be needed to operate the mines. That Mr. Bradley thought 200 horse power would be a liberal estimate for the power continuously required in the operation of the mine, and that then a proposed contract was drawn up by the parties in which various alterations were afterwards made; that the witness himself drew up the outline of the option and that after that the option was either drawn or dictated by Mr. Bradley or Mr. Taylor; that the original draft was probably in the handwriting of the witness, as both of the last named gentlemen suggested alterations and changes which were noted by the witness; that the option or contract wasn't signed by either of the parties at that time, but that the draft made was simply for submission to the parties in Boston; that the last clause in the contract was drawn by the witness himself; that he inserted the word "continuous" instead of "uninterrupted," which was changed at the suggestion of Mr. Taylor, because of the fact that a continuous current might be construed to be a direct current; that after the draft of the contract had been so made, Mr. Bradley wrote a letter to Mr. Henry Endicott, who was the most influential bondholder under the mortgage deed of trust held by the International Trust Company and who had represented most of the other bondholders, and that the witness took the letter with him and a draft of the con-

tract; that upon his arrival in Boston, he presented the draft of the contract and the matter was discussed between the three original bondholders and the witness, Mr. Henry Endicott, Mr. William Endicott and Mr. Wallace Hackett. That they asked the witness if he considered 200 horse power adequate, and he told them that was a subject upon which he declined to advise them, because he had no technical knowledge of the requirements of the plant, he could merely tell them about a 30-stamp mill and about the machinery that was there. At that time, the witness testified, Mr. Thane was in Boston and they took the matter up with him, and that the result of Mr. Thane's advice was made known to Mr. Bradley; that after consulting with Mr. Thane, he advised them that they would require 300 horse power in continuous use to operate the mine, and that thereupon Mr. Henry Endicott sent a wire to Mr. Bradley at Wardner, Idaho, which the witness presented in connection with this testimony, and which was afterward read into the record; that thereupon there was nothing done for several days until Mr. Bradley's wire was received; that two or three days after that, Mr. Endicott received a wire from Mr. Bradley, which was afterwards read into the record. Shortly after that Mr. Hackett and the witness proceeded with the organization of the Oxford Mining Company, and the property theretofore held in trust by the International Trust Company was deeded to the Oxford Mining Company as soon as the

president of the Trust Company returned from Europe. As soon as this was done the contract as drafted or submitted by Mr. Bradley with his letter of August, was signed exactly as drafted and submitted except wherever the words two hundred horse power had appeared in the contract originally the words three hundred horse power were substituted.

The witness then testified that during all the negotiations had, nothing was said at all in regard to starting surges; that the witness had no knowledge whatever of the necessity of starting surges, and that he didn't suggest it and didn't discuss it; that the estimates that were made of the amount of power that would be required were made by Mr. Bradley at the time the contract was drawn up and were based upon the actual need of the mine and not upon starting surges as the same were being discussed at the trial, and that it was not until after August, 1910, when the Oxford Company had elected to take the current that any statement was made to the witness or any one within the knowledge of the witness, concerning the fact that the starting surges were necessary, or that the contract meant anything else in practical or effectual terms than 300 horse power; that nothing was said about a peak load by any of the parties until after the Oxford Company had elected to take the current; that the contract was drafted as Mr. Bradley's and Mr. Taylor's proposition; they didn't sign it, they drafted it and then enclosed it with a letter from Mr.

Bradley, which was afterward read into the record. As soon as the Oxford Mining Company signed the contract it was sent to San Francisco and signed there, that the only change made in the contract as presented by Mr. Bradley was that the words three hundred horse power were substituted for two hundred; and that the Oxford Company and Mr. Wallace Hackett and the Endicotts relied upon the representations made by Mr. Bradley; that they were presented with the correspondence from him to them; and that they assumed they would have an effectual power at their disposal equal to the amount named in the contract.

The letter (Record, Vol. 1, p. 108) from Mr. Bradley to Mr. Endicott referred to by the witness and read into the record, contained the statement that he, Bradley, thought 150 horse power was all the power necessary to operate the Sheep Creek Mines, and that 200 horse power was a liberal estimate of the power necessary for that purpose.

The telegram (Record, Vol. 1, p. 109) sent by Mr. Endicott to Mr. Bradley was to the effect that he was satisfied with the contract provided 300 electric horse power was substituted in place of 200; and the telegram from Mr. Bradley to Mr. Endicott was to the effect that this was agreeable to him.

The third error assigned relates to the admission of the evidence given by the witness Thane over the objection of appellants.

The testimony (Record, Vol. 1, p. 118) of this witness was to the effect that he advised the predecessor of the plaintiff that 300 horse power was necessary to operate the Sheep Creek Mines, instead of 200; that at the time he was consulted about this matter he was more or less familiar with the Sheep Creek Mines, and that he advised them that 300 horse power was necessary, and that this advice was not based upon any estimate whatever as to the necessity of starting surges.

The fourth error assigned relates to the admission of the evidence given by the witness Wallenburg over the objection of appellants.

This witness (Record, Vol. 1, p. 239 *et seq.*) testified that he had made inquiry with a view of determining the power consumed at Sheep Creek prior to the fall of 1909. The statement was then made by counsel for the appellee that the purpose of the testimony of this witness was to show that a surge was necessarily implied in Mr. Bradley's offer to contract. The witness then proceeded to testify that he made an investigation of the conditions of the mine prior to the time mentioned and inquired into the equipment of the mine at that time; he then enumerated the various pieces of machinery that were then at the mine, accord-

ing to his information, and testified that the total amount of power necessary to operate all the machinery situate at and near the mine was 380 horse power; he then proceeds further to calculate as to the necessary power required to operate this machinery, and determines that 260 horse power would be necessary.

The witness was then asked the following question:

“Well, assuming for the moment that it was the intention of Mr. Bradley not to give a starting surge upon the current which he proposed to give to the plaintiff company or to its predecessor, could that property have either been operated or started on the two hundred horse power provided for in the contract at the time it was drawn?”

The witness then testified that the compressor on the ground was something like the same size as the one which the appellee was trying to start with this current at the present time, and could not be started if arranged as the appellee's compressor was now arranged. He was then asked: “Could it have been started with two hundred horse power without a reasonable surge?” to which the witness replied: “Not if installed with a motor as this one is.”

The fifth error assigned relates to the action of the court in receiving the evidence of the witness Bishop over the objection of appellants.

The testimony (Record, Vol. 1, p. 252) of this wit-

ness related to the machinery installed at the Sheep Creek Mines and the power requirements of the mine, and was offered and received to throw light upon the negotiations which led up to the execution of the contract of October, 1909.

The sixth error assigned relates to the action of the court in rejecting the testimony of the witness Proebstil called by appellants.

This witness (Record, Vol. 1, p. 364) after qualifying as an electrical engineer, was asked the question what is meant by the phrase "current of not to exceed 300 electric horse power." This testimony was offered for the purpose of proving the technical meaning of the phrase "current not to exceed 300 electric horse power," this phrase being employed by the parties in the contract of October, 1909. The question asked was objected to and the testimony of the witness ruled out by the court.

The seventh error assigned relates to the action of the court in not permitting the witness Kinzie, called by appellants, to testify (Record, Vol. 1, p. 523) to facts which would tend to show that the appellee and its predecessor in interest, the Oxford Mining Company, had not complied with the terms of the contracts on their part; and in not permitting the appellants to amend their answer so as to more fully set up non-performance on the part of the appellee.

The eighth error assigned relates to Finding Num-

ber III (Record, Vol. 3, p. 1054) as made by the court. By this finding the court finds that prior to August, 1909, the International Trust Company were the owners of a group of mines, power plant and other apparatus situated at Sheep Creek, and that the Sheep Creek Mines did at that time require 260 actual horse power for their operation, exclusive of additional starting currents or surges necessary to start the mine and its machinery in operation.

The ninth error assigned relates to the action of the court in making its Finding Number IV (Record, Vol. 3, p. 1056) wherein the court finds that prior to the month of August, 1909, the power plant at Sheep Creek, then in the possession of the International Trust Company, had been used for the generation of power used in connection with the operation of the Sheep Creek Mines, which were provided with certain machines and apparatus enumerated in the finding.

The tenth error assigned relates to Finding Number V (Record, Vol. 3, p. 1057) made by the court, wherein the court finds that the International Trust Company prior to August, 1909, was also in possession of certain other mines known as the Silver Bow Basin Mines, including the Ground Hog group of mines, and that the International Trust Company claimed an equitable title to the Sheep Creek Mines,

in connection with which the power plant referred to in previous findings had been used.

The eleventh error assigned relates to Finding Number VI (Record, Vol. 3, p. 1058) as made by the court, in which the court finds that in August, 1909, F. W. Bradley represented to L. P. Shackleford, attorney for the International Trust Company, that the appellant corporations desired to secure possession and control of the Sheep Creek power plant and construct upon the millsites, upon which this power plant is situated, a water power plant of substantial size and efficiency of a producing capacity of about 3,000 horse power, and that it was the desire of the appellant corporations upon the construction of such power plant to provide the International Trust Company or its successors with a sufficient power to operate the mines claimed by the International Trust Company known as the Sheep Creek mines, and accept in exchange a deed for the Sheep Creek power plant. That the said Bradley then had authority to represent the appellant corporations and to bind them as their representative, and at the same time represented that an uninterrupted current of 200 horse power placed at the disposal of the International Trust Company would be sufficient to operate the Sheep Creek Mines, and that said statement "referred to "the ordinary electric load necessary to the operation of the mines and the mining machinery ap-

"purtenant thereto and did not include an estimate of the amount of power momentarily necessary to start machinery that would uninterruptedly consume or use 200 horse power." That thereupon a draft of a contract was made which was in most respects identical with the contract of October, 1909, except that the words 300 were substituted in place of the words 200, and that thereafter the said F. W. Bradley wrote a letter to Mr. Henry Endicott, the principal bondholder interested in the power plant, which letter reads as follows:

"Treadwell, Alaska, August 10, 1909.
"Henry Endicott, Esq.,
101 Tremont Street,
Boston, Mass.

Dear Sir:

We have been talking to Mr. L. P. Shackleford about your water right on Sheep Creek, this district, and both he and ourselves have agreed upon what we consider an extremely fair proposition. Our concessions have been drawn up in the shape of a document which Mr. Shackleford will present to you.

As it is now this Sheep Creek water power is in jeopardy and can be taken at any time by adverse interests. Our proposed arrangement will preserve your rights while at the same time developing them and making the most use of them. I presume you are holding this water right for the value that it has had and may have in the future for working the Sheep Creek mines and thirty stamp mill connected therewith. Estimating conservatively, 150 HP, is all the power these mines and mills ever required for their past operations.

The mill is amply large enough for the mine and surely two hundred H.P. will more than take care of future requirements.

If the proposition is at all acceptable to you we would begin immediate work, thereby preserving your rights and returning you some monthly income. The proposition provides amply time in which you could decide either to sell the property outright or take two hundred H.P. for the operation of the mines and mill.

Yours very truly,

F. W. Bradley."

and that thereupon the said Shackleford proceeded to Boston to present the said draft of agreement to the said Henry Endicott and the International Trust Company.

The twelfth error assigned relates to the action of the court in making its Finding Number VII (Record, Vol. 3, p. 1061), in which the court finds, that upon the presentation of such draft of agreement by the said Shackleford, the parties interested in the power plant at Sheep Creek made an investigation as to the amount of power actually needed by them, exclusive of the amount necessary for any momentary starting surges, for their machinery, which matter of surges was not discussed between the parties to the contract, and that the parties then ascertained that they would need the continuous use of 300 horse power, and that accordingly the said Henry Endicott sent F. W. Bradley a telegram reading as follows:

"Boston, August 23, 1909.

F. W. Bradley
Wardner, Idaho.

Will lease power on terms proposed subject to consent trust company if three hundred horse power is substituted for two hundred.

Henry Endicott."

and that thereupon the said Henry Endicott received from the said F. W. Bradley a telegram which reads as follows:

"Henry Endicott:

You may substitute three hundred for two hundred horse power may I cable Sup't Kinzie to begin immediate protective measures.

F. W. Bradley."

That thereafter the said International Trust Company and the bondholders beneficially interested in the property transferred the said property to the Oxford Mining Company, and caused the said Oxford Mining Company to execute with the appellants the agreement of October, 1909, which is then set up in words and figures in the Finding.

The court then proceeds in the following language:
" And the court finds from the surrounding circumstances that it was the intention of the said Oxford Mining Company and of the defendant companies to provide to the said Oxford Mining Company the beneficial and uninterrupted use of 300 actual horse power, including such starting surges and other conditions which would reasonably insure to the said

“Oxford Mining Company and its successors the
“right to use 300 actual horse power in connection
“with the ordinary machinery used in mining and the
“ordinary forms of induction motors in common use
“in mining for loads of 300 horse power or less. The
“court further finds that for loads of 300 horse power
“or less induction motors having an inherent phase
“displacement and power factor less than unity were
“in ordinary and practical use in mining and that the
“use of said ordinary and practical machinery in mi-
“ning operations was contemplated by the defendants
“at the time of the execution of the contract, and the
“power contracted for was 300 actual horse power as
“distinguished from 300 apparent horse power, and
“that the contract contemplated the practical and ben-
“eficial use of 300 horse power as ordinarily spoken
“of and ordinarily measured by common and ordinary
“instruments for the measurements of horse power.
“The court further finds that the common and ordi-
“nary instrument and device in universal use for the
“measurement of horse power was and is the watt
“meter, which measures actual as distinguished from
“apparent power. The court further finds that in
“making the said contract the said Oxford Mining
“Company relied, and had a right to rely, upon the
“representations made by the said defendant com-
“panies to the effect that it was the purpose of defend-
“ant companies to furnish the amount of power stip-
“ulated in the contract in real, actual and practical

“working efficiency, together with such momentary
 “surges necessary to start the machinery of the Ox-
 “ford Company, or its successor, the uninterrupted
 “use of 300 real horse power to be used in connection
 “with ordinary motors commonly used upon loads of
 “300 horse power or less, including induction motors.”
 (See Record, p. 1070.)

The thirteenth error assigned relates to the action of the court in making its Finding Number VIII (Record, Vol. 3, p. 1074) in which the court finds that the Oxford Mining Company on the 31st of October, 1909, elected to take 300 horse power, and did thereupon make the conveyance of the property referred to in the contract of October, 1909, but did not receive any of the power contracted for until November, 1912.

The fourteenth error assigned relates to Finding Number IX (Record, Vol. 3, p. 1075) as made by the court, wherein the court finds that the plaintiff, as successor in interest of the Oxford Mining Company, is engaged in doing development work, and that unless it is supplied with the electric current referred to in the contract of October, 1909, its development work will be delayed and it will suffer irreparable injury, which cannot be compensated at law.

The fifteenth error assigned relates to the action of the court in making Finding Number X (Record, Vol. 3, p. 1076) wherein the court finds that the appellee made arrangement to do its development work

in reliance upon the contract it had with the defendant companies (appellants) to furnish electric current, and employed one hundred and seventy-five men, and that it would be difficult to re-employ these men, unless they were kept continually employed, and further, that the bondholders of the appellee who held its bond to the extent of three and one-half million dollars would in some wise be injured.

The sixteenth error assigned relates to Finding Number XI (Record, Vol. 3, p. 1077) as made by the court, wherein the court finds that in November, 1912, the appellee had installed certain machinery at Sheep Creek, and at Silver Bow Basin, Alaska, and that the appellants at that time had set the circuit breaker so that the same would not go out until from 80 to 100 amperes were taken from the bus bars by the appellee, and that while the circuit breaker was so set the appellee was able to develop 300 horse power; that thereafter and on the 2nd of December, appellee's machinery at Silver Bow Basin was also placed upon the circuit and for a time successfully operated; that between the 4th and 6th days of December the defendant companies (appellants) changed the setting of the circuit breaker so that the same would go out and break the circuit when more than 60 amperes were drawn, the voltage being maintained at about 2300. The court further finds "that the said circuit breaker so installed "is not of the usual ordinary type used upon feeders "leaving power houses, but is what is known as an

“ instantaneous circuit breaker; that the ordinary and
 “ usual type of circuit breaker placed upon feeders
 “ leaving direct from power houses is what is known
 “ as a thirty second time relay circuit breaker which
 “ guards against the circuit breaker being thrown out
 “ by momentary and unavoidable surges of current.
 “ That the starting of machinery which will consume a
 “ given amount of power often causes what is known
 “ as a starting surge which lasts from ten to thirty
 “ seconds, but from a practical standpoint is not taken
 “ into account or charged for in electrical connections
 “ and is disregarded and provided against by the use
 “ of the ordinary type of time relay circuit breaker.
 “ That in the Juneau Mining District it is not custom-
 “ ary for the defendant companies to charge any other
 “ customer for the necessary starting surges for ma-
 “ chinery connected with the said power plant of the
 “ defendant companies, but that the power is measured
 “ upon the amount taken under normal conditions, that
 “ is to say, by the amount of power taken after the
 “ machinery is started and in operation” (See Record,
 p. 1179).

The seventeenth error assigned relates to making of
 Finding Number XII (Record, Vol. 3, p. 1081) by the
 court, wherein the court, after finding that the appel-
 lants in setting their circuit breaker made their cal-
 culations upon a theoretical basis assuming a unity
 power factor, that is to say, a power factor of 100%;
 did not install a watt meter or make observations from

a watt meter as to the power actually developed from the current furnished. That there was no circuit upon any of the power lines of the appellant companies which had a power factor of 100%, and that the appellants were at the present time not using any motors except those of the induction type, in connection with the power plant of the appellant companies. The court then finds that wherever motors of the induction type are used the power factor is less than unity, and that the actual and effective power developed can only be measured by a watt meter. The court then finds that the appellants have a watt meter in their possession but have not installed the same upon the appellee's circuit, and have refused the appellee the privilege of installing a watt meter upon the panel at the power house of the appellant companies. The court finds that a watt meter is the usual and ordinary device for measuring horse power.

The eighteenth error assigned relates to Finding Number XIII (Record, Vol. 3, p. 1082) as made by the court, in which the court finds that it is customary for power companies to allow a reasonable starting surge to the consumer sufficient to start and put in operation machinery which would normally consume the current provided for.

The nineteenth error assigned relates to Finding Number XIV (Record, Vol. 3, p. 1083) as made by the court, in which the court finds that since the

24th day of December, appellee has been unable to start its machinery except under an order of the court requiring appellants to hold in their circuit breaker during the time required to start such machinery.

The twentieth error assigned relates to Finding Number XVI (Record, Vol. 3, p. 1084) as made by the court, in which the court makes certain findings in relation to the manner in which the circuit breaker is thrown in after being thrown out by reason of incoming peaks, and the court then finds that at no time since the 6th day of December, 1912, except during such times as starting surges were drawn did the appellants furnish appellee with an uninterrupted current of 300 horse power.

The twenty-first error assigned relates to Finding Number XVII (Record, p. 1085) as made by the court, wherein the court after finding that in October, 1909, the Oxford Mining Company had no power plant except that referred to in the previous findings, uses the following language: "and that it was the
"intention of the defendants to provide for the actual
"and beneficial use of a current of 300 real horse
"power at the power plant of the defendant cor-
"poration, and that from the surrounding circum-
"stances a starting surge was naturally to be implied
"or presumed, and that without a starting surge (in
"connection with induction motors, which the court
"finds is the ordinary type of motor in mining use,

“ for loads of 300 horse power or less) the practical
 “ and beneficial use of more than 100 horse power
 “ could not have been obtained. The court further
 “ finds that under the conditions existing aforesaid at
 “ the time the contract was executed the parties could
 “ not have contemplated the uninterrupted delivery of
 “ 300 horse power provided for in the contract unless
 “ a starting surge was implied in the said contract.”
 (See Record, p. 1085.)

The twenty-second error assigned relates to Finding
 Number XVIII (Record, Vol. 3. p. 1087) as made by
 the court, wherein the court finds: “that an inverse
 “ time relay circuit breaker which will resist ordinary
 “ overloads for the period of thirty seconds is the
 “ usual, common and proper device for maintaining
 “ connections upon lines leaving power houses and that
 “ such circuit breaker should be installed upon the
 “ switch board of the defendant (appellants) compa-
 “ nies so as to protect the defendant (appellants) com-
 “ panies from short circuits yet provide enough resist-
 “ ance to prevent the circuit between the plaintiff (ap-
 “ pellee) and defendant (appellants) companies from
 “ being broken under ordinary starting surges.” (See
 Record, p. 1087.)

The twenty-third error assigned relates to the first
 conclusion of law (Record, Vol. 3, p. 1089) adopted
 by the court, whereby the court concludes that the ap-

pellee is entitled to have the contract of October, 1909, specifically enforced.

The twenty-fourth error assigned relates to the adoption by the court of conclusion of law Number II (Record, Vol. 3, p. 1090), in accordance with which the court concludes that the appellee is entitled under the contract to the "beneficial use of an uninterrupted current of 300 real horse power."

The twenty-fifth error assigned relates to the conclusion adopted by the court designated as conclusion of law Number III (Record, Vol. 3, p. 1090), which is as follows: "That the plaintiff is entitled to all
" reasonable surges of power necessary in starting ordinary apparatus used in connection with mining so
" that an uninterrupted and normal current of 300
" actual horse power may be continuously used after
" the starting of such machinery."

The twenty-sixth error assigned relates to the adoption by the court of conclusion Number IV (Record, Vol. 3, p. 1090), which is in words and figures as follows: "That the contract in question contemplated
" and referred to the use of real power and that the
" connections of the defendant companies (appellants)
" with the transmission line of the plaintiff company
" (appellee) be so established as to prevent the breaking of said circuit upon the use of said momentary
" starting surges and that the circuit breakers of the

“defendant companies (appellants) be so installed so
 “as to permit reasonable and momentary starting
 “surges.”

The twenty-seventh error assigned relates to the adoption of the court of its conclusion Number V (Record, Vol. 3, 1091), which is as follows: “That
 “the defendant companies (appellants) so arrange
 “their connection with the power line of the plaintiff
 “company (appellee) that in addition to said starting
 “surges the plaintiff company (appellee) be enabled
 “to draw 300 actual horse power uninterruptedly in
 “their operations, and that the apparatus and devices
 “installed by the defendants (appellants) for the pur-
 “pose of maintaining a circuit with the plaintiff com-
 “pany (appellee) be set and regulated according to
 “approved watt meter readings so that the current
 “will not be interrupted except when more than 300
 “actual horse power, according to watt meter read-
 “ings, is being taken by the plaintiff (appellee) of the
 “defendant companies (appellants).”

The twenty-eighth error assigned relates to the adoption by the court of conclusion Number VI (Record, Vol. 3, p. 1092), which is in words and figures as follows: “That the plaintiff (appellee) is entitled to
 “have established upon the connection of the plaintiff
 “(appellee) with the defendant companies (appel-
 “lants) at the switch board at the power plant of the
 “defendant companies (appellants) situated at Sheep

“Creek a thirty-second inverse time relay circuit breaker so as to provide for ordinary overloads necessary to starting surges.”

The twenty-ninth error assigned relates to the refusal of the court to make Finding Number IV (Record, Vol. 3, p. 1162) as requested by the appellants, which refusal of the court was based upon the ground that the facts as stated in said Finding had already been found by the court.

The thirtieth error assigned relates to the refusal of the court to make Finding Number V (Record, Vol. 3, p. 1161), as requested by appellants, wherein the court was asked to find that 300 horse power could be developed from an electric current of 56.2 amperes with a voltage of 2300 impressed.

The thirty-first error assigned relates to the refusal of the court in not concluding, as requested by appellants (Record, Vol. 3, p. 1164) that the appellants by making available for the plaintiff's (appellee's) use an electric current in excess of 56.2 amperes with a voltage of 2300 impressed have complied with the terms of the contract between the parties on their part.

The thirty-second error assigned relates to the refusal of the court to conclude as a matter of law (Record, Vol. 3, p. 1165) that the plaintiff's (appellee's) bill of complaint be dismissed.

The thirty-third error assigned relates to the action of the court in making and entering its decree (Record, Vol. 3, p. 1093).

The first objection to the decree is that the court of equity should not have decreed specific performance of the contract sued upon for the reason (1) that the contract is not such a contract as will be specifically enforced; (2) that the plaintiff (appellee) has a plain, speedy and adequate remedy at law; (3) that the rights of the plaintiff (appellee) were uncertain and undetermined; and (4) that the plaintiff (appellee) itself did not offer to do equity.

The second objection to the decree is that it is so indefinite and uncertain that it would be impossible to comply with it.

The third objection to the decree is that it directs the appellants to install a watt meter and a thirty second time relay circuit breaker, whereas, there is nothing in the contracts between the parties requiring the installation of these devices or any other particular form or kind of device or apparatus.

The next objection to the decree is that it is based upon an erroneous construction of the contracts between the parties in that under it the appellants are compelled to furnish and make available for the use of the appellee a current from which the appellee will develop 300 mechanical horse power, regardless of the manner or place of use or the type or form of apparatus employed in developing the energy in the form

of electric current into the energy in the form of mechanical power (this without the least regard to the volume of current required for that purpose), that is to say, the appellants are required to furnish the appellee not with current but with actual mechanical power to the extent of 300 horse power, whereas under the contract the appellants are required only to make available for the use of appellee a current from which it, the appellee, can develop 300 mechanical horse power.

Again, the construction placed upon the contract by the court is erroneous in that under the decree the appellants are required to furnish and make available for the appellee's use starting currents, surges and peaks exceeding 300 electric horse power to an unlimited extent, whereas, the contract expressly limits the contract to be made available to a current of not to exceed 300 electric horse power.

The thirty-fourth error assigned relates to the refusal of the court (Record, Vol. 3, p. 1096) to grant appellants a new trial, and the action of the court in overruling a motion made in that behalf.

ARGUMENT.

While there are a large number of errors assigned it will be noted that many of the errors complained of are of like character or are mere recurrences of the same thing, so that the points to be discussed are comparatively few in number.

The first error complained of deals with the action of the court in overruling the appellants' demurrer. The complaint was demurred to on the ground that the plaintiff (appellee) had a plain, speedy and adequate remedy at law, and that the character of the contract was such that the court of equity could not decree its specific performance.

The demurrer was overruled by the court and this action of the court presents the first subject for discussion.

Equity is established for the correction of that wherein the law, by reason of its universality, is deficient. Whenever the legal remedy is adequate, the court of equity has no jurisdiction. This is fundamental. Under the contracts in question, the appellants agree to place at the disposal of the appellee an electric current of not to exceed 300 electric horse power which is to be taken from and at the generating plant. There is no contention that the appellants are insolvent or unable to respond in damages. If, therefore, the appellants fail to comply with this covenant in the contract it is difficult to con-

ceive of any reason why an action for damages resulting from such breach would not in all respects afford the appellee adequate and complete relief. The value of electric current could be easily proven, and the judgment, when recovered, could be collected without difficulty. Hence, the completeness and adequacy of the remedy at law.

It is alleged that appellee was, when the complaint was filed, doing development work, and that it would suffer great inconvenience and loss if it were, at that time, deprived of this particular current which it had calculated to use in connection with the doing of this work. It was not alleged, however, that this particular current possessed any virtue peculiar to itself, or any quality not found in other electric currents. It was not alleged or claimed that the appellee, if deprived of this current, could not supply itself with a similar current by installing a gas plant, by installing steam turbines or by developing water power for that purpose. True, this current was available, while a current to be generated by the machinery referred to could not be made available until the machinery was installed. But in any event, the installation of the machinery required to operate a small generator of 300 electric horse power could at most require but a very short period of time. More or less delay in procuring commodities always follows from a breach of a contract to furnish them. It always requires time to manufacture or purchase the commodity, the fail-

ure to deliver which is complained of. In this case it would only be necessary to send for the machinery and place it in position. The time required to do this could not be much greater than the time required to send for a case of ham or a crate of eggs. Yet, no one would contend that the court would decree the specific performance of a contract for the sale of the last mentioned commodities even though appellee's men were all without food and its mines were compelled to shut down on account of the failure to deliver the required ham and eggs.

In any event, therefore, a current of not to exceed 300 horse power provided for in the Oxford Contract has no value to the appellee, aside from what it would cost to procure a similar current elsewhere, either by purchasing the same in the market, or what amounts to the same thing, by purchasing the machinery necessary to develop it and adding thereto the cost of operating such machinery. This cost could be easily calculated and recovered in an action brought for that purpose on the law side of the court.

There is another and further reason, however, why a court of equity cannot decree specific performance of the particular contract in question. Under the terms of the contract, the appellants bind themselves to furnish to the Oxford Company, or its assigns, a current of not to exceed 300 electric horse power. The obligation to deliver this current is not limited as to time, but continues on indefinitely throughout all

time, the only limitation being that the appellant companies shall not be liable in damages for interruptions caused by physical or operating causes beyond their control. The court cannot, therefore, make an order that will settle the matter in dispute. If the court should attempt to compel the appellants to comply with the contract by delivering current to the appellee, it would be necessary to keep this cause before the court for all time. The decree could never be fully executed; every failure on the part of the appellants to comply with the contract would result in a new and separate trial before the court upon contempt proceedings. The cause would never be finally determined, but would cumber the court calendar as long as time endures. Again, in order to comply with the covenants on their part, the appellants must first generate the electric current, must keep the machinery to be used therefor in repair and supervise its operation. This requires not only personal service but a high degree of skill as well. And it has never been held that a contract requiring personal service or the exercise of skill in its performance could be specifically enforced.

In some cases, where the public interests were involved and the welfare of the general public would be injuriously affected unless the contract in question was specifically enforced, and where no personal services or services involving skill were required under the contract, the courts have to a limited extent sought

to enforce contracts, the performance of which continued over a considerable period of time. Such were cases, for instance, where one railroad was required to permit another to use its tracks, or a telegraph company was required to permit another company to string wires on its poles; but in none of these cases were the parties required to perform service, either skilled or otherwise, in order to carry out the provisions of the contract; and in each and all of them, the court departed from the otherwise uniform rule and took cognizance of these cases on the ground that the public interest required it.

The reason for the rule that the court will not decree specific performance of a contract, the performance of which extends over a number of years, is found in the fact that courts must dispose of pending cases, in order that they may find time at their disposal to try and determine such other cases as are brought before them from time to time. If this rule were not followed, the business of the courts would become congested, and the interests of the public would suffer accordingly. It is only in those cases where the public interest demands it that the rule is in the slightest relaxed, as where matters in connection with the operations of *quasi* public corporations, such as railroads and telegraph companies, are brought to the attention of the court. In all the cases, however, where the rule has been thus relaxed, there is a fixed time during which the court will be required to supervise the

execution of its decree, and neither personal nor skilled service is required of the party making the performance. In the case at bar, on the other hand, the time of performance is unlimited, and extends throughout all the years to come, and the defendants (appellants) will be required to perform personal service requiring a high degree of skill.

Marble Co. vs. Ripley, 10 Wallace, 350.

The case of *Marble Company vs. Ripley* is the leading case upon this subject. The appellee, Ripley, sought specific performance of a contract under which the Marble Company agreed to furnish him with certain quantities of marble from its quarry for an indefinite term of years. The parties had operated under the contract for a period of more than ten years without any apparent difficulty prior to the time that the action was instituted. The court below entered a decree directing specific performance of the contract. The case was appealed to the Supreme Court of the United States, where it was held that the contract was not such a contract as would be specifically enforced. In passing upon the features of the contract pertinent to the matter now under discussion the Supreme Court say:

“Another serious objection to a decree for a specific performance is found in the peculiar character of the contract itself, and in the duties which it requires of the owners of the quarries. These du-

ties are continuous. They involve skill, personal labor, and cultivated judgment. It is, in effect, a personal contract to deliver marble of certain kinds, and in blocks of a kind, that the court is incapable of determining whether they accord with the contract or not. The agreement being for a perpetual supply of marble, no decree the court can make will end the controversy. If performance be decreed, the case must remain in court forever, and the court to the end of time may be called upon to determine, not only whether the prescribed quantity of marble has been delivered, but whether every block was from the right place, whether it was sound, whether it was of suitable size, or shape or proportion."

Texas & P. Ry. Co. vs. City of Marshall, 10 S. C. Rep., 846.

In this case the railroad company had entered into a contract with the city, under the terms of which it agreed to maintain its principal office and shops in the city. The city sued for specific performance of the contract. The lower court held with the city and decreed specific performance. Upon appeal the case was reversed by the Supreme Court of the United States on the authority of *Marble Co. vs. Ripley*.

Berliner Gramophone Co. vs. Seaman, 110 Fed., 30.

In this case specific performance of a contract extending over a period of fifteen years was asked, but the court held that equity would not grant the relief de-

manded, since no decree could be entered that would dispose of the matter at once. In passing upon this matter, the court quotes with approval from Mr. Justice Miller in the case of *Ross vs. Railway Co.*, as follows:

"The rule is settled, even in the English Chancery, where the jurisdiction is greatly extended in all such cases, that it will decree specific performance only when it can dispose of the matter by an order capable of being enforced at once; that it will not decree a party to perform a continuous duty, extending over a number of years, but will leave the opposite party to his remedy at law."

General Electric Company vs. Westinghouse Electric & Mfg. Co., 144 Fed., 458.

In this case specific performance was asked of a contract covering a period of fifteen years. The complaint was demurred to and the demurrer sustained on the ground that the contract could not be performed at once. In passing upon the matter the court say:

"It is a continuing contract, running for 15 years, and the courts will not undertake to supervise and compel performance of such a contract."

The court after sustaining the demurrer to the bill gave the plaintiff thirty days to amend its complaint. It appears that the contract contained negative covenants in addition to the affirmative covenants. The

complaint was then amended so as to ask for injunctive relief against the breach of these negative covenants, and as so amended the complaint was held good on demurrer. Upon this matter the court say:

“When a contract contains both affirmative and negative covenants, breach of the latter, or negative covenants, may be enjoined although specific performance of the former cannot be decreed.”

Sewerage & Water Board vs. Howard, 175 Fed., 555.

In this case the Sewerage & Water Board had made a contract with the appellee, Howard, to pump water into his mains as long as he had any customers on the mains. The Sewerage & Water Board threatened to discontinue pumping the water in the mains, as provided for in the contract, and an action was brought to enjoin it from discontinuing to so pump the water. The court after holding that the granting of such an injunction was in effect decreeing specific performance of the contract, and that the contract was of a continuing character, refused to grant the relief demanded and held that the remedy was at law.

Lone Star Salt Co. vs. Texas S. R. L. Co., 90 S. W., 863; 3 L. R. A. (n. s.), 829.

In this case the Lone Star Salt Company had entered into a contract with the Railroad Company, under which it agreed to furnish the Railroad Company 66%

of its tonnage, in consideration of the fact that the Railroad Company would extend its line so as to give the Salt Company the advantage of a competing line. It appears that the Railroad Company complied with its part of the contract, and brought suit against the Salt Company with a view of compelling it to furnish the tonnage agreed upon. The contract, it appears, was for a term of years. The court denied the relief demanded on the ground, among others, that the contract was of a continuous character. The opinion is specially valuable in that the court distinguishes the case before it from such case as the *Franklin Telegraph Company* against *Harrison* and other like cases, where a large public interest was involved, and where for that reason the court apparently, to some extent at least, relaxed the rule that specific performance of contracts extending over a period of time would not be decreed.

Pacific Electric Co. vs. Campbell-Johnson, 94
Pac., 623.

This case was a suit brought to compel the specific performance of a contract under which the Railroad Company agreed to build and operate a railroad. The court held that the building and operation of a railroad was such a contract as required personal service and that its performance would cover a considerable

period of time, and accordingly denied the relief. In passing upon this question the court say:

"Courts of equity only decree specific performance where the subject matter of the decree is capable of being embraced in one order and is immediately enforceable."

Peterson vs. MacDonald, 110 Pac., 465.

This case was decided by the Supreme Court of California in June, 1910. It is in principle on all fours with the case at bar. It appears that the plaintiff, Peterson, was the owner of two adjoining dwellings, both supplied with water from the same tank, into which water was being pumped by means of a wind mill. The plaintiff, Peterson, sold to the defendant, MacDonald, the property on which the tank was situate with a reservation in the deed to the effect that he was to have a right to the use of the water from the tank on the premises conveyed upon the payment of fifty cents per month as rent for such water as long as he continued to use it. It appears that the defendant, MacDonald, without any cause violated this contract by shutting off the water so that it ceased to flow from the tank to the plaintiff, Peterson's premises. These facts were set up in the complaint, and the court was asked to enjoin the defendant, MacDonald, from further obstructing the flow of the water from the tank. The complaint was demurred to and from an order sustaining the demurrer the case was appealed to the Supreme Court,

where the action of the lower court was sustained. In passing upon the matter the Supreme Court of California say:

"The allegations of the complaint, as well as the prayer, called for a restoration of the flow of the water from the tank into the pipe, thence to plaintiff's premises, and for a decree permanently enjoining defendant from obstructing the flow of said water through said pipe. Thus necessarily the defendant would not only be required to perpetually maintain the well and the pump and the other apparatus used for pumping the water, but would be compelled to keep the same in such order as to cause water from the well to be pumped into the tank, and thus supply the plaintiff, so far as the plant maintained intact could do so, with water necessary for his purposes as contemplated by the 'reservation.' The effect of the decree, if framed in accordance with the tenor of the averments and prayer of the complaint, would, in other words, be to compel the performance of personal services, which cannot be done. Section 3390, Civ. Code. If, for example, the pumping machinery should be destroyed or in any manner become impaired so that it could not pump water into the tank, the defendant would be required to rehabilitate or repair the machinery so that it could furnish plaintiff with water or otherwise incur the penalty consequent upon a violation of the injunction. Of course, it is well understood that injunction will not lie to prevent the breach of a contract, which would not be specifically enforced.

"Plaintiff had available to him adequate compensatory relief."

The reasoning of the Supreme Court of California is particularly applicable to the case at bar. It requires not only service, but skilled service, to generate electric current and to supervise the operation of the machinery used in that connection. Furthermore, if the machinery required to furnish the electric current should get out of repair or should be destroyed, the appellants in this case would be obliged to repair such machinery or replace it, just as the owner of the windmill and the water tank would be obliged to rebuild it. The two cases are identical in character except that it requires a far higher degree of skill to generate electricity and repair and build hydro-electric plants than it does to pump water or to repair or rebuild a windmill.

In the case of the *Montgomery Light & Power Co. vs. Montgomery Traction Company*, a suit brought by the Power Company against the Traction Company to prevent it from purchasing electric power from other power companies, the parties had entered into a contract, under which the power company had agreed to furnish the Traction Company electric current to operate street railways and for the purpose of lighting its stations, cars, sheds and the like; and the contract provided that the Traction Company was not to purchase current elsewhere during the life of the contract. Suit was brought to enjoin the Traction Company from purchasing power from parties other than the power company. The point was

raised that since the Traction Company could not have specific performance against the Power Company for the reason that the contract was continuous in its nature covering ten years, it could not be specifically enforced against the Power Company. The court held that while the contract could not be specifically enforced against the Power Company because of the continuous nature of the contract the negative covenant in the contract to the effect that the Traction Company should not purchase power elsewhere could be enforced by the court. In passing upon this question the court, quoting with approval from *High on Injunctions*, say:

“While in cases of contracts containing both affirmative and negative stipulations the authorities are exceedingly conflicting and irreconcilable as to whether equity may interfere by injunction to prevent a breach of the negative covenant when the affirmative is of such a nature that it cannot be specifically enforced by a judicial decree, yet the later and better considered doctrine is that equity may thus interfere to restrain the violation of the negative stipulation, although it cannot specifically enforce the affirmative one.”

The cases relied upon by the appellee do not hold to the contrary, as appears upon a closer examination of them, viz:

Franklin Telegraph Co. vs. Harrison, 145
U. S., 459 (Oct., 1891).

Agreement by defendant to let plaintiff put up a wire at plaintiff's expense on defendant's poles; after ten years wire was to become defendant's with priority of use in plaintiff at rental of \$600. The court ordered defendant to keep the wire in good repair for plaintiff so long as defendant maintained its lines.

This case can be distinguished on the following grounds:

(1) The question of the jurisdiction of equity because of continuous performance or personal service was in no way considered by the court.

(2) There was no feature of personal service involved as there is in the present case.

(3) The Telegraph Company was a public service corporation.

Hendricks vs. Hughes (Ala.), 23 So., 637 (May, 1898).

"Defendant leased plaintiff a gin-mill for five years and covenanted to keep water-power in good running order. Power for gin-mill taken by a pulley from shaft of saw-mill operated by defendant. Defendant began to construct another gin-mill between that of plaintiff and the saw-mill. *Plaintiff prayed for an injunction restraining construction of the new gin-mill.*"

This case is clearly not in point since here no affirmative relief was prayed for or granted. The court

simply enjoined the construction of the new gin-mill, saying:

"It is true that a court of equity will not undertake to enforce specific performance of an agreement which requires 'continuous administration of executory skill, discretion, personal supervision,' etc., as decided in *Wingo vs. Hardy*, 94 Ala., 184, 10 South., 659; *Bridgeport Land & Improvement Co. vs. American Fireproof Steel Car Co.*, 94 Ala., 595, 10 South., 704, and many others. We find nothing in the present bill to which this principle can apply. There is no complaint of a want of water power. The prayer of the bill is to enjoin the erection of a gin house which will cut off complainant from the use of the water power, and destroy the benefits of his lease. The bill is not strictly one to decree a performance of a contract, but, by injunction, to prevent the destruction of contractual obligations. *Bienville Water Supply Co. vs. City of Mobile*, 112 Ala., 260, 20 South., 742; *South & N. A. R. Co. vs. Highland Ave. & B. R. Co.*, 98 Ala., 400, 13 South., 682. It will be time enough to consider the question so elaborately discussed by appellees when it arises."

Joy vs. St. Louis, 138 U. S., 1 (Oct., 1890).

Agreement between City of St. Louis and two railroads by which a right was granted to one railroad through a public park over which the second railroad was to have a right of way. This right of way was denied by the first railroad.

The court expressly based its decree for specific performance, despite the continuous performance and personal service involved, on the public need. The

following language from the case clearly indicates that:

“Railroads are common carriers and owe duties to the public. The rights of the public in respect to these great highways of communication should be fostered by the courts; and it is one of the most useful functions of a court of equity that its methods of procedure are capable of being made such as to accommodate themselves to the development of the interests of the public, in the progress of trade and traffic, by new methods of intercourse and transportation. The present case is a striking illustration. Here is a great public park, one of the lungs of an important city, which, in order to maintain its usefulness as a park, must be as free as possible from being serrated by railroads; and yet the interests of the public demand that it shall be crossed by a railroad. But the evil consequences of such crossing are to be reduced to a minimum by having a single right of way, and a single set of tracks, to be used by all the railroads which desire to cross the park. These two antagonisms must be reconciled, and that can be done only by the interposition of a court of equity, which thus will be exercising one of its most beneficent functions.”

Union Pacific Ry. Co. vs. Pacific Ry. Co., 163
U. S., 564 (April, 1896).

Contract whereby plaintiff and defendant were to use each other's lines subject to regulations. The court held that the contract of the defendant could be enforced specifically despite the continuous performance and personal service involved.

Although this case goes further than the Joy case, the court still proceeds upon the same theory—that of the interest of the public in the performance of the contract. The tendency of the courts to enforce railroad contracts specifically is based on the public interest involved because of the right to public use. Mr. Justice Fuller says in the present case at p. 603:

“It was objected in Joy’s case that the court was proposing to assume the management of the railroad ‘to the end of time,’ but Mr. Justice Blatchford, speaking for the court, responded that the decree was complete in itself, and that it was ‘not unusual for a court of equity to take supplemental proceedings to carry out its decree and make it effective under altered circumstances.’ And the court applied the principle that considerations of the interests of the public must be given due weight by a court of equity, when a public means of transportation, such as a railroad, comes under its jurisdiction. ‘Railroads are common carriers and owe duties to the public,’ said Mr. Justice Blatchford. ‘The rights of the public in respect to these great highways of communication should be fostered by the courts; and it is one of the most useful functions of a court of equity that its methods of procedure are capable of being made such as to accommodate themselves to the development of the interests of the public, in the progress of trade and traffic, by new methods of intercourse and transportation. The present case is a striking illustration. Here is a great public park, one of the lungs of an important city, which, in order to maintain its usefulness as a park, must be as free as possible from being serrated by railroads; and yet the interests of the public demand that it shall

be crossed by a railroad. But the evil consequences of such crossing are to be reduced to a minimum by having a single right of way, and a single set of tracks, to be used by all the railroads which desire to cross the park. These two antagonisms must be reconciled, and that can be done only by the interposition of a court of equity, which thus will be exercising one of its most beneficent functions.'

"Clearly the public interests involved in the contracts before us demand that they should be upheld and enforced."

This court had occasion to pass upon this precise point in the case of *Pantages vs. Grauman*, which was a suit for the specific performance of a contract. Under the contract sued upon the second party agreed to sell to the first party certain shares of stock in an amusement company, and the first party agreed to furnish certain amusements for a term of ten years. The suit was brought for specific performance of the sale of the stock under this agreement. Specific performance was denied for the reason that since a party could not be compelled to furnish personal services for a term of years, the contract could not be specifically enforced against both parties. The contract was deemed to be such that it was not divisible, so that specific performance could not be granted to either party. Hence the court holds that the demurrer to

the complaint was properly sustained. In passing upon this point the court said:

"It remains to apply these principles to the present controversy. As has been observed, the chief purpose of the agreement was to perfect an arrangement for engaging in the theatrical business. It was necessary to have a playhouse. This seems to have been adequately provided for. It was, furthermore, necessary to secure theatrical talent, and the parties stipulated for that. But it rests in the agreement of Pantages that the amusement company shall be entitled to the first call upon the vaudeville acts and performances to be booked for the theater company in San Francisco. This agreement on the part of Pantages is a continuing affair, to drift over a period of 10 years, and, while the consideration to be paid for the acts and performances is an inducement for the theater company to provide the same, yet the covenant of Pantages is not such a one as equity can or will require to be specifically performed as it will not interpose to take care that Pantages shall require the theater company to furnish the stipulated talent to the amusement company continuously throughout the entire time designated."

The next four errors assigned relate to the action of the court in receiving parol testimony in regard to the negotiations had between the parties, which led up to the execution of the contract sued upon and of statements made between the parties in connection with such negotiations.

The witness Shackleford was permitted to testify,

over the objection of the appellants, to matters which were subsequently merged in the written contract.

The testimony of the witness Thane related also to the negotiations had prior to the execution of the contract. The testimony of the witnesses Wollenburg and Bishop was adduced with a view of showing what was meant by the statement made by Mr. Bradley verbally to Mr. Shackleford and by letter to Mr. Endicott prior to the execution of the contract and in connection with the negotiations which led to its execution.

The II, III, IV and V errors assigned therefore are all of like character so interrelated that they can be discussed together.

The contract sued upon is in writing. The rights of the parties under it must depend upon the terms of the writing itself, and these cannot be varied, modified or explained by parol evidence. The statements made by the parties prior to the execution of the contract, with reference to the subject-matter of the contract were merged in the written contract, and it is now the only evidence that can be considered by the court in determining what the parties did or did not agree to.

Clearly if the court could now receive parol evidence upon the question of what the parties did or did not agree to in connection with the subject matter of the written contract prior to its execution, it would of course have been quite a useless matter for the par-

ties to have executed a writing setting forth the matters upon which they had agreed.

It is fundamental that where the parties have reduced to writing the terms of a contract and agreement between them, and that writing has been duly executed, it is the only evidence by which can be shown what the agreement was.

In the case of *Atwood vs. Cobb*, 26 American Decisions, 657, the rule of law bearing upon this subject is well stated in the following language:

“The general rule is, that parol evidence bearing upon the terms of the contract is not admissible, because, if they vary it, it is a weaker species of evidence, and cannot control it, and if they are to the same effect, they add no strength to it, are immaterial, and therefore inadmissible; and because, when parties have reduced the evidence of their contract to writing, it supersedes all the verbal negotiations which preceded it.”

The Supreme Court of the United States said on this point:

“We have no disposition to overrule or qualify in any way the general and familiar doctrine enforced by this court in repeated decisions, from the case of *Hunt vs. Rousmanier*, 8 Wheat., 174, decided in 1823, to that of *Seitz vs. Brewers' Refrigerating Company*, ante, 510, decided at the present term, that parol testimony is not admissible

to vary, contradict, add to or qualify the terms of a written instrument."

Fire Insurance Assn. vs. Wickham, 141 U. S., 564, 576.

The sixth error assigned relates to the action of the court in excluding evidence offered by the appellants with a view of proving the technical meaning of some of the terms employed in the contracts.

The witness Proebstil was called by appellants and after he had duly qualified as an electrical engineer was asked to explain the meaning of the phrase "current of not to exceed 300 electric horse power." This question was objected to on the ground that the interpretation of the contract was a question of law for the court and the objection was sustained.

Ordinarily, of course, this objection would have been sound, but the contract sued upon deals with electric current and terms used in connection therewith are best explained by electrical engineers who have a technical knowledge of the meaning of such terms. Unless such testimony is admitted it becomes necessary for the court to resort to the use of text books and other sources of information on the subject of electricity to inform itself in regard to the technical meaning of the terms employed in contracts containing terms having such technical meaning. Not only to avoid inconvenience to the court, but for the further reason that the necessary sources of information are frequent-

ly not available, witnesses are allowed to testify concerning such matters, and the court should have admitted the evidence.

The seventh error assigned deals with the action of the court in not permitting the witness Kinzie to testify to facts which would show a noncompliance on the part of the appellee and its predecessor in interest with the terms of the contract sued upon to be kept and performed on their part. This testimony was objected to because a noncompliance with such terms was not especially plead in the answer, and the objection was sustained. Thereupon leave was asked to amend the answer so as to especially plead such non-compliance, and such leave was denied.

Both of these positions taken by the trial court were erroneous. Before the appellee was entitled to specific performance of the contract it was incumbent upon it to show that it and its predecessor in interest had complied with the terms of the contract on their part. This was necessarily a part of their case, and any evidence tending to prove that they had not so complied with the terms of the contract on their part was competent under the general issue. Such non-compliance did not have to be especially pleaded, it was not new matter interposed as a defense, it was a mere denial of one of the things appellee would be required to prove before it would be entitled to the relief sought, and clearly the court erred in excluding the testimony.

If there were, however, any reason why such non-compliance should be especially pleaded the court should have permitted an amendment, and the action of the court in refusing to permit such amendment was error. If the appellee were taken by surprise it might have been proper for the court to grant a continuance on that account, but the amendment should have been permitted nevertheless. It was not, however, claimed that the appellee was taken by surprise and there was no reason why an amendment should not have been allowed.

All the errors assigned in connection with the Findings made by the trial court are such that they can be discussed together.

The court found that three contracts in writing were executed between the parties in relation to the subject-matter of this suit; and the court further found that the appellants were, at the time of the commencement of the suit, making available and placing at the disposal of the appellee, an electric current upon a three-phase circuit of 60 amperes with a voltage of 2300 impressed; that the appellants placed upon the appellee's circuit an instantaneous circuit breaker so adjusted that the circuit would be broken whenever the current taken exceeded 60 amperes.

So far the findings of the court are not open to objection.

The court, however, further found that certain negotiations were had between the appellant compa-

nies and the predecessor in interest of the appellee prior to the execution of the contract of October, 1909, and that in connection with those negotiations certain representations were made by the parties and certain agreements reached.

All of these findings were based upon the testimony of the witnesses Shackelford, Bishop, Thane and Wallenburg, which testimony was received by the court over the objection of the appellants. In connection with these findings the court found that it was the intention of the parties to the contract, to provide for the appellee and its predecessor 300 actual horse power, that is to say, that it was not enough that the appellants furnished the appellee or its predecessor a current of electricity of 300 apparent or electric horse power (that being a current from which 300 actual or mechanical power could be developed), but that the current made available must at all times be such that the appellee not only *could* develop 300 real or mechanical horse power from it, but actually *would* develop 300 mechanical horse power from it, regardless of the manner or place of use or the character of apparatus employed in developing the current furnished into mechanical power. All this without placing any limitation upon the appellee as to how or where the current is to be developed into mechanical power or as to the type or character of motors or apparatus to be employed in that connection.

These findings of the court are open to the objec-

tion (1) that they are not in accordance with the evidence presented and (2) that they are immaterial and not within the issues because the rights of the parties depend upon the terms of the written contracts before the court, and not upon the negotiations or arrangements had between the parties prior to the execution of such contracts.

The evidence in relation to the negotiations and treaty had prior to the execution of the contract which led up to the execution of the contract of October, 1909, clearly shows that from the first it was the intention of the parties to enter into a contract under the terms of which the appellants were to furnish the predecessor of the appellee an electric current from which it could develop 300 mechanical horse power as distinguished from a current from which it would develop that much power. That is to say, it was the intention that the thing to be furnished should be current, and in no sense mechanical power.

In the month of August, 1909, Mr. Bradley, representing the appellant companies, and Mr. Shackelford, representing the International Trust Company, commenced the negotiations which resulted in the execution of the several agreements which the court is now called upon to construe.

The American Gold Mining Company had, in previous years, been operating the mines referred to in the evidence as the Sheep Creek Mines. A thirty stamp mill had been erected on this property and

sufficient of the waters flowing in Sheep Creek to operate a small direct current generator situate at or near the site of the present power plant belonging to the appellant companies, had been diverted and applied to such use.

The current generated by this generator had been used by the American Gold Mining Company in connection with the operation of the Sheep Creek Mines and thirty stamp mill. Neither the mine nor the mill had been operated for a number of years, and the right to the use of the water previously appropriated was in jeopardy because of such non-usage. The International Trust Company had succeeded to the rights of the American Gold Mining Company under a mortgage foreclosure and was endeavoring to sell the property so as to convert the same into money.

It was under these circumstances and conditions that the negotiations between Mr. Bradley on the one hand, and Mr. Shackleford on the other, were carried on. Mr. Bradley was desirous of installing a generating plant to be propelled by the waters flowing in Sheep Creek, with a view of supplying the current for use in connection with the operation of the mines belonging to the appellant companies. Mr. Shackleford was desirous of disposing of all the holdings of the International Trust Company.

Mr. Bradley testifies, that during the summer of 1909, he carried on negotiations with Mr. Shackleford looking towards the purchase from the Interna-

tional Trust Company of certain millsites, wharf site, machinery, appliances, and other property, including the Sheep Creek Water Right, pipe line and power house. He says (Record, p. 651) :

“I did not consider the then old, disused and dilapidated electric and compressor air power plant as of much value, but did value the patented millsites along the beach as they controlled the best site for a new power house. I considered that the water flowing in Sheep Creek would belong to whoever appropriated and utilized it; but I did not want any trouble with our neighbors so negotiated the contract of October 14th, 1909, in which Mr. Shackelford, as representing the International Trust Company, and myself, as representing the defendant corporations in this action, had mutually agreed upon \$25,000 as the value of all the foregoing described property (referring to the property previously described by him in detail), consisting of patented millsites with two other tracts of land, with wharf and wharf site together with a power house and other buildings, other plants, machinery and pipe lines and the then developed water power.”

Continuing Mr. Bradley says:

“After coming to this agreement as to the value of all the foregoing property, it was then considered that to sell this water right would leave the Sheep Creek thirty stamp mill and mines without their water power, and it would consequently be difficult to sell them” (see Record, Vol. II, p. 651).

This led to the consideration of a plan under which sufficient power would be reserved for use in connec-

tion with the operation of the Sheep Creek Mines and thirty stamp mill. Mr. Bradley estimated that 150 horse power would be ample power to operate the mines and stamp mill (See deposition Bradley, Record, p. 653; evidence Kinzie, Record, p. 492; evidence Shackleford, Record, pp. 102, 103). In order to make certain that power enough would be supplied under all contingencies, a current of 200 horse power was agreed upon as the extent of the current to be reserved for that purpose.

A draft of the proposed contract was then prepared. The draft was written by Mr. Shackleford in his handwriting, and contained the ideas of all the parties upon the subject, Mr. Bradley and Mr. Taylor making suggestions as to what the draft should contain, while it was being prepared and written out by Mr. Shackleford (see evidence Shackleford, Record, pp. 102-103). The draft of the contract having been completed Mr. Shackleford proceeded to Boston to confer with his principals, and Mr. Bradley wrote a letter to Mr. Henry Endicott, connected with the International Trust Company. This letter is offered in evidence and occurs in Record, p. 652. In this letter Mr. Bradley told Mr. Endicott that estimating conservatively 150 horse power was all the Sheep Creek mine and mill ever required, and that since the mill was amply large enough for the mine, surely 200 horse power would meet all future requirements.

Upon reaching Boston, Mr. Shackleford conferred

with Mr. Endicott and others connected with the International Trust Company, and since none of these gentlemen knew anything about the operation of the mines, they called in Mr. B. L. Thane, who was then in Boston, in order to procure from him expert advice upon the subject. Mr. Thane advised them that he thought 200 horse power was not sufficient power with which to operate the Sheep Creek mines, and suggested that 300 horse power would be necessary for that purpose (see evidence Shackleford, Record, p. 107; Thane, Record, p. 118). Thereupon, Mr. Endicott wired Mr. Bradley that, subject to the consent of the International Trust Company, he would enter into the proposed contract, a draft of which had been submitted to him by Mr. Shackleford, if 300 horse power were substituted for 200. The Oxford Company was then organized to take over the properties at Sheep Creek from the International Trust Company, and entered into the proposed contract with the defendant companies. Thereafter, and as soon as the necessary steps could be taken, the contract of October 14th was executed by the officers of the Oxford Company, and sent to Mr. Bradley and executed by the appellant companies a few days later (see evidence Shackleford, Rec., pp. 110; deposition Bradley, pp. 649-667).

There is nothing in the testimony either received or offered that would indicate that the question of what the power factor should be was ever mentioned

or referred to. The matter was not discussed at all. Not the slightest reference was ever made by any of the parties to the contract prior to its execution relative to the manner in which this power should be developed. Nothing was said from which it could be inferred that it was ever supposed by anyone that a part of the current to be furnished was to be wasted or dissipated, or that the appellee should have the right to develop the current by machinery operated at a power factor of less than 100 per cent., and still have the right to sufficient current to enable it to develop 300 mechanical horse power. Nothing was said as to the form or type of motor that was to be used in developing the power or the place at which said motors were to be operated, except that the contract expressly provides by express provision that the current is to be taken from and at the generating plant.

Again, the finding of the court to the effect that at the time the contract was entered into, motors of the induction type were in general use in connection with mining operations in Alaska is not sustained by any evidence whatsoever. Only one witness testified upon the subject and that was the witness Kinzie, and according to his testimony there were no motors of any kind in use in the locality at that time. The only generating plant that did business at all in the locality prior to the time the contract was executed was the small direct current generating plant of the Oxford Company, and this was not being used.

Of course, there were generating plants in the towns used to generate current for lighting purposes, but no generating plants that generated current for power purposes. The first plant ever constructed in the locality of substantial size was the Sheep Creek generating plant of appellants. Another generating plant was built at Ketchikan. This, however, was smaller and it was not shown what type of motors were there used. No other generating plants existed in the locality at any time until about two years ago, when appellants constructed another plant at Nugget Creek and the appellee now has under construction a large plant at Salmon Creek (see evidence Kinzie, Record, p. 515).

There can be no evidence whatsoever that any form or type of motor at all was in general use at the time the contract was executed, because there being no current to develop any power, no form or type of motor could be used at all.

True, the evidence shows that at the present time the appellant companies are using motors of the induction type, but it also shows that they are now installing two large synchronous motors in order to correct the power factor.

Mr. Kinzie, general superintendent of the power companies, explained very fully why these companies had installed these motors of the induction type, and had used them up to the present time. According to his testimony, the supply of current generated at

the appellant companies' generating plants far exceeded their demands. Motors of the induction type were cheaper and more easily operated, and for that reason while the current supply was larger than the current demand, it was deemed profitable to operate with motors of the induction type, but that in recent years the demands for current at the mines had so increased that all the current that could possibly be developed was required to operate the mines, and that for that reason synchronous motors were being installed to correct the power factor on the circuit so as to enable appellants to develop all the power apparent in the circuit into mechanical power (see evidence Kinzie, Record, p. 517).

There is no evidence, therefore, to indicate that the parties contracted with reference to the use of any particular kind of motor or had in mind the use of any particular kind of motor when the contract was made, or that it was customary to install motors of any given type. No motors of any type, as we have already said, were in use, and nothing was said upon the subject between the parties, and whatever findings the court made in this regard were wholly without any evidence to support them.

That all these findings of the court in regard to what transpired between the parties in connection with the execution of the written contract outside of the contract itself are immaterial and outside of the issues presented, is apparent in view of the general principle

that all contemporary, pre-existing arrangements, relating to the subject-matter dealt with by a written contract are merged in the written contract itself.

The court further found from circumstances, negotiations and other matters outside of the contract itself that the Oxford Company and the appellee, as its successor, should be entitled to not only 300 electric horse power current, but also to such *peaks* or *surges* as might from time to time be required to operate. That is to say, that the appellee should be entitled to draw such starting current as might be necessary to start machinery requiring 300 electric horse power to operate.

The findings of the court in this regard are subject to the same objection urged against the findings just discussed. Surely it cannot be contended that this finding is in accordance with the evidence, for Mr. Shackleford himself testified that in all the negotiations had which led up to the execution of the contract the matter of starting currents, surges or peaks was never mentioned or referred to by any one (see evidence Shackleford, Record, p. 111). If the matter was never referred to the court could not very well find, under the evidence, that it was agreed such starting currents, peaks or surges should be furnished.

And what has been said in relation to the previous findings of the court in regard to negotiations had in relation to the subject-matter of the written contract applies with equal force here.

In the case of the *Lone Star Salt Co. vs. Texas*

S. R. L. Co., 90 S. W., 863, 864, the trial court read into the contract existing between the parties the words "as it accrues," for the reason that according to its version of the matter, the parties must have so intended it. But the Appellate Court in reviewing the decision criticizes very severely this action of the trial court, and in passing upon it uses the following language:

"It is important, first, to see just what was the obligation assumed by the defendant, the salt company, and whether or not it was such as the courts below construed it to be. The promise is to furnish for transportation 66 per cent. of all the tonnage moved by rail, etc. At what times and in what quantities is the tonnage to be delivered for transportation? The contract does not answer by any of its express provisions. It does not stipulate that 2 tons, or 2 car loads, or 2 train loads out of every 3, which the defendant may get ready for shipment, shall be furnished to plaintiff; nor does it provide for the apportionment by days, weeks, or months. If there is an obligation to deliver the tonnage as it accrues, it is an implied one to be found by construction. It is true, as contended by counsel for plaintiff, that, in decreeing specific performance, a court should, if necessary, determine by construction the legal effect of the agreement to be enforced, and enforce it according to its true meaning and intent; but it is not competent for the court to add to the contract a promise which the party has not made. *Blanchard vs. Detroit L. & M. R. Co.*, 31 Mich., 52, 18 Am. Rep., 142. The argument is that the promise to deliver the freight as it accrues is necessarily implied from the nature of the agreement expressed,

the situation of the parties, and the objects which they intended to accomplish. The circumstances supposed to lead to this conclusion are that plaintiff's road is only about 9 miles in length, running through an unsettled territory in which the traffic originating, besides that to be derived from the defendant's business, is not sufficient to justify plaintiff's enterprise; that the agreement to build the road was made in reliance, mainly, on the support to be received from the defendant in carrying out its part of the contract, but the road, being in existence, must, in discharge of plaintiff's duties to the public be continuously maintained with or without that support, at a profit with it, and at a heavy loss without it; that its business, which the parties must be held to have contemplated, consists in the running of trains at stated times for the purpose of hauling freight tendered for shipment at those times, and that defendant's business also requires the constant and regular transportation, in and out, of its product and its supplies.

"Conceding for the present, that all of these circumstances are to be considered, and that they are all that are to be considered, in determining what the parties intended to accomplish by the contract, the trouble remains that the defendant has not bound itself to deliver the tonnage as it accrues as a means of securing to plaintiff the advantages mentioned. Specific performance is decreed to enforce the doing of that which the party himself has agreed to do, and not the doing of something which he has not agreed to do because it is deemed essential to the complete attainment of the benefits or advantages anticipated as results of the contract. Considerations such as those mentioned may have been inducements leading to the contract, and may be regarded in determining the

meaning of the language used by the parties; but what they agreed to do in order to bring to pass the desired results must be determined from their language, and their promises cannot be extended or restricted by the court to make them contribute to the attainment of such results more fully than as expressed they might do. This is especially true in such a proceeding as this, in which the sole basis of the decree must be the agreement of the party certainly specifying the thing he is bound to perform."

The twenty-third error assigned and the thirty-second, raise the same question. The first mentioned relates to the conclusion of the court whereby the court considers that the appellee is entitled to have the contract sued upon specifically enforced, and the next mentioned error assigned relates to the refusal of the Court to conclude as requested by the appellants that appellee's complaint should be dismissed.

The question of whether the contract sued upon is such a contract as a court of equity would specifically enforce was first raised by demurrer; and the court's action in overruling the demurrer was assigned as error. This action of the court has already been discussed and the matter so far as it was raised by the demurrer need, of course, not be reconsidered at this time. The same question was, however, again raised by the answer, and upon the trial additional reasons presented themselves why the court should not decree specific performance of the contract sued upon.

The court found that the parties had entered into

two contracts, in relation to the subject-matter in dispute, bearing dates subsequent to the contract of October, 1909. One of these subsequent contracts, bearing date of April 22, 1911, relates to what is known as the Gilbert contract. It appears that a considerable time after the contract of October, 1909, had been executed and after appellants had spent large sums of money under its contract in the erection of their generating plant, a certain contract referred to as the Gilbert contract was discovered upon the records of the Juneau Recording District. The parties recorded this as a cloud upon the Oxford Company's title, and the Oxford Company in order to indemnify the appellant companies against any claim that might be made by Gilbert or his assigns, executed the contract of April 22, 1911.

(See Contract, Record, pp. 1044, 1050.)

(See evidence Shackleford, Record, p. 116.)

(See evidence Bradley, Record, p. 676.)

This contract provides, among other things, that if at any time the appellants are deprived of the use of any of the waters flowing in Sheep Creek by Gilbert or his assigns, the quantity of current to which the Oxford Company shall be entitled under the contract of October, 1909, shall be accordingly decreased. This contract, referred to as the Gilbert contract, has never been passed upon or adjudicated.

(See evidence Kinzie, Record, p. 495.)

Appellants do not wish to be understood as contending or conceding that any rights exist in Gilbert or his assigns under said contract either as against the appellants or otherwise, but the fact, nevertheless, remains, that this question has never been judicially determined. Any judicial determination of the rights of Gilbert or his assigns under the Gilbert contract might be such that the appellee would not be entitled to any current under the contract of October, 1909, for the reason therefore that the Gilbert contract is not now before the court, so that the rights of Gilbert and his assigns can be determined. Because it is impossible for the court to say at this time what the appellee's rights may or may not be at a future date under the contract of October, 1909, and since the court could not determine this question, it was not in position to enter a decree providing that the appellee would be entitled either to a fixed quantity of current or a fixed amount of power.

Again, the construction placed upon the contract of October, 1909, by the court is such that the quantity of current to be furnished by appellees under it must at all times remain uncertain.

The court does not attempt to measure the current to be furnished by any unit of measurement by which current is or can be measured, nor does the court place any limit whatever upon the quantity to be furnished. Under the court's decree, the appellee is entitled to whatever current it may require to develop 300 me-

chanical horse power, and since the current is developed by the appellee by apparatus installed by it and under its control, and since this apparatus may be such as to require 56.2 amperes, it may require not only the entire output of the Sheep Creek generating plant, but the output of many such generating plants in order to develop 300 mechanical horse power. The court does not fix or measure the thing to be furnished either in certainty or otherwise, but leaves the whole matter to be determined by the subsequent conduct of the appellee. Just how and why this is so will be discussed more in detail when the court's decree is brought up for discussion on a subsequent page in this brief. The quantity of current to be furnished is likewise rendered uncertain because the court decrees the appellee entitled to *starting currents* unlimited as to extent. This again renders the whole matter altogether uncertain. This feature of the court's decree will also be brought up for discussion upon a subsequent page.

That a contract, the terms of which would be as uncertain and indefinite as the terms of this contract would be if the construction placed thereon by the trial court were sustained, could not be specifically enforced, has been often decided by both the State and Federal courts.

This matter was considered by the Supreme Court of the United States, in the case of *Colson vs. Thom-*

son, reported in 2 Wheaton, 336; where the rule was announced to be as follows:

“The contract which is sought to be specifically executed ought not only to be proved, but the terms of it should be so precise as that neither party could reasonably misunderstand them. If the contract be vague or uncertain, or the evidence to establish it be insufficient, a court of equity will not exercise its extraordinary jurisdiction to enforce it, but will leave the party to his legal remedy.”

The same rule was adhered to in the case of *Purcell vs. Miner*, 4 Wallace; and again, in the case of *Preston vs. Preston*, 95 U. S., 200; in which latter case, Mr. Justice Field, speaking for the Supreme Court, says:

“It is a familiar rule in this branch of the law that a contract, which a court of equity will specifically enforce, must be certain as well as fair in its terms; and the certainty required has reference both to the description of the property and the estate to be conveyed. Uncertainty as to either, not capable of being removed by extrinsic evidence, is fatal to any suit for a specific performance.”

In the case of the *Minnesota Printing Co. vs. Associated Press*, 83 Fed., 850, 856, the court uses the following language:

“But, waiving that question, it must be borne in mind that it is a well-established rule that courts of equity will not undertake to enforce an

agreement if any of its provisions are so far indefinite or ambiguous as to render it uncertain what were the intentions of the parties, and what obligations they intended to assume. A suit for specific performance can only be maintained where the terms of the agreement are so precise that they cannot be reasonably misunderstood. If the contract which a complainant seeks to enforce is vague or uncertain, a court of equity will not interfere, but will leave him to his legal remedy. *Colson vs. Thompson*, 2 Wheaton, 336, 341. And, where a contract is clearly susceptible of different reasonable interpretations, a court of equity ought not to take the chances of decreeing its specific execution in a way which will possibly do violence to the intentions of the parties thereto. In all such cases, as well as where a contract is not fair and just in all its parts, or is tainted with illegality, the party seeking to enforce it should be remitted to his action for damages."

To the same effect are *Atwood vs. Cobb*, 26 American Decisions, 661; and *Walcott vs. Watson*, 53 Fed., 435; *Hildreth vs. Duff*, 143 Fed., 140, s. c. 148 Fed., 677.

Again, if the contention is sound, that the terms of the contract are so uncertain that they require parol testimony to explain them (which we do not concede), it follows that the contract is too uncertain to be enforced by a court of equity.

In the case of *Davis & Roesch Temperature Controlling Co. vs. Tagliabue, et al.*, 159 Fed., 712, the

court in discussing this character of uncertainty as affecting the right to specific performance says:

“The language of the contract is not uncertain. Its meaning can be drawn from within the four corners of the instrument. No ambiguity is apparent. There seems to be no need of evidence of practical construction. And yet both sides have taken and presented a vast mass of testimony as to what the parties said, did, and wrote under the contract and with respect to it after it was executed. It is sufficient to say, regarding this testimony, that if the contract were so ambiguous and uncertain as to require testimony of subsequent dealings to make its meaning clear it would not be a contract which a court of equity would specifically enforce as against a purchaser for value with or without notice of its provisions. *Uncertainty as to the meaning of a contract is fatal to a claim for its specific performance.*”

These assignments of error raise still another point:

It is a maxim in equity that “he who asks equity must do equity.” One cannot compel another to do that which in equity and good conscience such other would do unless he has done those things in relation to the subject-matter which he in equity and good conscience should have done. It appears in the evidence in this case, that in October, 1909, the Oxford Company entered into an agreement with the appellant companies, under which it agreed to convey to them, among other things, a certain water right known as the Sheep Creek water right. That relying upon this agreement, the appellant companies constructed a

generating plant to utilize the water in relation to which this contract had been made; and expended in that behalf a large sum of money. A subsequent contract refers to this sum as a sum in excess of \$100,000.00, but it must be a matter of common knowledge that a plant such as this costs greatly in excess of that sum. After this plant had been erected and during the month of January, 1911, suits were brought against them in relation to this water right, and then, for the first time, Mr. Shackleford learned of the existence of what is referred to as the Gilbert contract, from a document by which the rights, whatever they were under that contract, were assigned by Joseph T. Gilbert to the Alaska Perseverance Mining Company, which document was spread upon the records of the Juneau Recorder's Office, and thus brought to the attention of Mr. Shackleford.

(See evidence Shackleford, Record, p. 116.)

Whatever rights, if any, might exist in Joseph T. Gilbert or his assigns under this contract would depend of course upon such decision as the court might render when the contract was brought before it for construction; but a cloud was cast upon the water right which the Oxford Company, acting entirely in good faith and without knowledge of this Gilbert contract, had agreed to convey. In order, therefore, to protect the defendant companies, it executed contemporaneously with the deed of April 22,

1911, an agreement under which it agreed to indemnify the defendant companies against such rights as Gilbert or his assigns might establish.

(See evidence Shackleford, Record, p. 116.)

(See evidence Bradley, Record, p. 676.)

There can be no doubt, in view of the fact that the Oxford Company agreed to convey this water right, having no knowledge of this pretended outstanding claim, that it would have become the duty of the Oxford Company to relinquish this claim to the appellants under the facts in the case if by any manner or means the Oxford Company should at any time have succeeded to the rights of Gilbert, whatever rights they might be, under this Gilbert contract. Good conscience and fair dealing alike would require this. Nothing less would be equitable. Surely the Oxford Company could not ask for a specific performance of the Oxford contract unless it—having succeeded to the rights of Gilbert—first assigned and relinquished those rights whatever they might be to the appellants. We do not contend or concede that any rights exist under the Gilbert contract, but it is an apparent cloud upon the title; and the Oxford Company having sold the water right with this apparent cloud existing upon it, without its knowledge and in the best of faith to be sure, would owe nevertheless the duty to the appellants to remove this cloud when it became within its power to do so. Without

doing this, it would not have done equity. If this duty would rest upon the Oxford Company under the conditions named, it likewise rests upon the appellee at the present time. It has succeeded to the rights of the Oxford Company and has likewise succeeded to the rights of the Gilbert. As the assignee of the Oxford Company, it has no rights that the Oxford Company would not have had, and it owes every duty that the Oxford Company would have owed; and since it is the owner and holder of this Gilbert contract, it is but equitable and just that the cloud imposed thereby on the defendants' rights should be removed by it. Not having done so, it is in no position to ask the performance of the Oxford contract. The maxim is "he who asks equity must do equity."

The twenty-fourth, twenty-fifth, twenty-sixth, twenty-seventh, twenty-eighth, thirty-first, thirty-second, and thirty-third assignment of errors all relate to the same thing, and can, therefore, be discussed together.

The first five relate to conclusions drawn by the court from the facts found, and the thirty-first and thirty-second relate to conclusions which the court was requested by appellants to draw from the facts found, and the thirty-third relates to the decree entered by the court.

The language employed by the court in Conclusion of Law Number II is as follows:

"That the plaintiff herein is entitled to the

actual and beneficial use of an uninterrupted current of 300 real horse power."

(See Record, page 1160.)

The language employed by the court in Conclusion of Law Number III is as follows:

"That the plaintiff is entitled to all reasonable surges of power necessary in starting ordinary apparatus used in connection with mining, so that an uninterrupted and normal current of 300 actual horse power may be continuously used after the starting of such machinery."

(See Record, page 1160.)

The language employed by the court in Conclusion of Law Number IV is as follows:

"That the contract in question contemplated and referred to the use of real power and that the connections of the defendant companies with the transmission line of the plaintiff company be so established as to prevent the breaking of said circuit upon the use of said momentary starting surges, and that the circuit-breakers of the defendant companies be so installed so as to permit reasonable and momentary starting surges."

(See Record, page 1161.)

The language employed by the court in Conclusion of Law Number V is as follows:

"That the defendant companies so arrange their connection with the power line of the plaintiff

company that in addition to said starting surges the plaintiff company be enabled to draw 300 actual horse power uninterruptedly in their operations, and that the apparatus and devices installed by the defendants for the purpose of maintaining a circuit with the plaintiff company be set and regulated according to approved wattmeter readings so that the current will not be interrupted except when more than 300 actual horse power, according to wattmeter readings, is being taken by the plaintiff of the defendant companies."

(See Record, pages 1161, 1162.)

The language of the court in Conclusion of Law Number VI is as follows:

"That the plaintiff is entitled to have established upon the connection of the plaintiff with the defendant companies at the switch-board at the power plant of the defendant companies situated at Sheep Creek a thirty second inverse time relay circuit-breaker so as to provide for ordinary overloads necessary to starting surges."

(See Record, page 1162.)

The court was asked to conclude from the facts found as follows:

"From the facts found the court concludes that the defendant companies, in making available for the plaintiff's use an electric current in excess of 56.2 amperes with a voltage of 2300 impressed, have complied with each and all of the terms of the contracts entered into between the parties on their part."

(See Record, pages 1164, 1165.)

And the thirty-first assignment of errors relates to the refusal of the court to conclude as thus requested.

The thirty-second assignment relates to the refusal of the court to conclude that the bill of complaint should be dismissed.

The thirty-third assignment relates to the action of the court in entering its decree.

The decree of the court provides, among other things:

1. That the plaintiff is entitled to have and receive of and from the defendants under and by virtue of the contract set forth in the plaintiff's complaint the uninterrupted and beneficial use of 300 real or actual horse power to be supplied by electric current;

2. That the plaintiff is entitled to have and receive of the defendants all reasonable starting surges used in connection with the ordinary machinery used in mining for the application of 300 horse power or less and necessary to the starting of such machinery and to the beneficial use of an uninterrupted current of 300 horse power;

3. That the plaintiff is entitled to the use of real and not apparent power, the same to be measured by wattmeter, and that the plaintiff is entitled to use upon the circuit connecting it with the power-house of the defendants any ordinary motors used in mining operations (whether of the induction type or otherwise)

commonly and ordinarily used in mining operations consuming 300 horse power or less.

It is ordered, adjudged and decreed that the defendants herein so set and maintain their connections, circuit-breakers and other appliances with the plaintiff company that the actual uninterrupted and beneficial use of the before mentioned rights of the plaintiff shall not in any way be interfered with, and the defendants are enjoined from using any appliances which will deprive the plaintiff of the enjoyment of the rights above decreed to the plaintiff; and defendants are perpetually enjoined from maintaining any circuit-breaker or other appliance which will deprive the plaintiff of 300 actual horse power, or any part thereof, to be measured by wattmeters or which will deprive plaintiff of any reasonable starting surges necessary to the enjoyment of the uninterrupted use of the said 300 actual horse power.

The court further decrees that the plaintiff be allowed to install upon the switchboard connecting the plaintiff's power line with the defendant's powerhouse a wattmeter, voltmeter and ammeter, and that the same be installed in such a way that the plaintiff may have the same under lock and key for its information and inspection to check the wattmeter, voltmeter and ammeter readings of the defendant companies at said point.

It is further ordered, adjudged and decreed in accordance with the foregoing that the contract of

October 14, 1909, be specifically performed by the defendants.

It is further ordered, adjudged and decreed that the defendants and each of them are hereby enjoined from doing any act or thing which will interfere with the enjoyment of the rights herein decreed to the plaintiff and against the defendants.

It is further ordered, adjudged and decreed that the defendants maintain and install upon the connection of the plaintiff's power line with the power house of the defendants at the switchboard at the power house at Sheep Creek an inverse thirty-second time relay circuit-breaker in such a manner as to provide reasonable starting surges in connection with the operation of the machinery of the plaintiff company upon said power line, which said circuit-breaker shall be set at all times so as to give an uninterrupted current of 300 real horse power as distinguished from apparent power, to be set and maintained in addition to the thirty-second resistance in the said circuit-breaker which is decreed for the purpose of providing to the plaintiff reasonable and adequate means of obtaining starting surges without interruption in their operations.

(See Record, pages 1166-1169.)

The matter presented for discussion by these assignments of errors deals with the question of whether or

not the conclusions and decree of the Court are warranted by the facts found.

As has already been observed the court found that the parties had made three contracts in relation to the subject matter of the suit, and the court further found other facts relating to the negotiations and dealings of the parties which led up to the execution of these contracts.

We will endeavor first to discuss the contracts themselves, in order to ascertain what the relative rights of the parties are under the contracts, and we will next endeavor to inquire into the findings made by the court with reference to the negotiations that led up to the execution of the contracts to ascertain if these can in any manner affect the conclusions that we may reach concerning the rights of the parties under the contracts themselves, if the findings of the court in this regard should be considered as material.

RIGHTS OF THE PARTIES UNDER THE CONTRACTS:

It will be observed that according to the first paragraph of the court's decree the plaintiff (appellee) is entitled to have and receive by and from the defendants (appellants) "the uninterrupted and beneficial use of 300 real or actual horse power to be supplied by electric current," and that according to the third paragraph of the court's decree the plaintiff (appellee) is entitled to the use of real and not apparent

power, the same to be measured by a wattmeter, and, further, that according to paragraph 2 of the court's decree, plaintiff (appellee) is entitled to receive in addition to the 300 actual horse power, starting surges or starting currents necessary to start apparatus having a running current of 300 horse power.

The decree further directs the defendants (appellants) to install a wattmeter for the purpose of measuring the power to be furnished and to install a time relay circuit-breaker so set as to enable the appellee to draw starting currents of thirty seconds duration, and the decree also provides that the plaintiff or appellee shall be allowed to install upon the switch-board at the power house of the appellants a wattmeter, voltameter, and ammeter, which it shall be allowed to install in such a way as to have the same under lock and key, for its information, so as to enable it to check the wattmeter, voltameter and ammeter readings of the appellant companies.

The appellants contend that the court's decree is erroneous in regard to these various matters.

According to this decree, the appellants are required to furnish the appellee 300 real or actual *horse power* as distinguished from an *electric current*, not to exceed 300 electric *horse power*, and are further required to furnish the appellee *starting surges or currents unlimited as to volume*, as distinguished from a current of not to exceed 300 electric horse power. In other words, under the court's decree, the thing to be

furnished on the one hand and received on the other is *power*, while it is contended by appellants that the thing to be received and furnished is not power, but *current* from which power can be developed.

Again, under the court's decree, the appellants are permitted to draw for thirty seconds at a time as much power as their convenience may require, regardless of the question whether the power thus drawn exceeds 300 electric horse power or not, while it is contended by appellants that under the contract the current to be furnished and made available on the one hand and to be received and drawn on the other can at no time exceed a current of 300 electric horse power.

The decree further provides that the appellants shall install a wattmeter and a thirty second time relay circuit-breaker, and in this connection the appellants contend the court had no right under the contracts to direct them or require them to install any particular kind of apparatus whatsoever. The matters to be discussed, therefore, present themselves under three heads, which we shall endeavor to discuss in their order.

UNDER THE CONTRACTS, APPELLANTS ARE REQUIRED TO FURNISH CURRENT AS DISTINGUISHED FROM POWER, AND SUCH CURRENT IS TO BE LIMITED AND MEASURED BY THE UNIT OF MEASUREMENT PROVIDED FOR IN THE CONTRACT.

The use of the terms "real" or "actual" power and the term "apparent" power, unless correctly understood, are apt to lead to confusion. At first glance, it may appear to one not familiar with the terms that real or actual power had reference to something which is real or actual, while the term "apparent" had reference to something which is only apparent, but which in point of fact is not real or actual. These terms, as used in connection with electricity have no such meaning and admit of no such construction. The term "power" in its most restricted sense refers only to energy available for doing work. It is only energy in this form, that is to say, energy which is available for doing work, that constitutes power. Electricity is a form of energy which is not available for doing mechanical work. Before it can be made thus available, it must be developed by means of a motor into mechanical power, that is to say, power on the shaft. Until it is so developed, it is not mechanical power. It only appears in the circuit as so much power that can be developed into mechanical power. The term "apparent" power then refers to the energy that circulates in the circuit and appears there as power that can be developed. While the term "actual" or "real"

power refers to that portion of the energy contained in the circuit that actually will be developed into mechanical power by use of the particular apparatus used in developing it, regardless of whether such apparatus develops all the energy in the circuit into mechanical power or only a portion of the energy there appearing into mechanical power, depending upon the efficiency of the apparatus used.

In ordinary electrical parlance, the term "power" is applied not only to mechanical power, but also to electrical current, and when used in connection with and applied to electrical current, it refers to the energy that appears in the current as undeveloped mechanical power, and this is referred to as apparent power. Electrical current is developed from mechanical power by means of a generator. That is to say, the generator is propelled by mechanical power and the output of the generator is a current of electricity. In other words, the generator is the apparatus employed for transforming mechanical power into electrical power or electrical current. The electrical current thus generated is in turn developed into mechanical power by means of a motor. That is to say, the motor is the device employed for transforming the electrical current or electrical power into mechanical power.

According to the decree of the court, the thing to be furnished by appellants is in effect mechanical power, that is to say, the output of the motor; accord-

ing to the contention of the appellants, the thing which they are required to furnish the appellee under the contract is not mechanical power, but electric current, the output of the generator.

The provisions contained in the three contracts set out at large in the findings of the court, in so far as they relate to the matter under discussion, are as follows:

Those occurring in the contract of October, 1909, are the following:

“It is the intention of the lessees to erect, equip and maintain upon said premises a water power plant of substantial size and efficiency for the generation of electric power, and if at any time after two (2) years from the date hereof the lessor or its assigns shall elect to take a current of not to exceed three hundred (300) electric horse power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the party of the second part. If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse power hereinbefore mentioned, the lessees may at their option prior to the expiration of the ten (10) years provided in this lease purchase the property herein leased absolutely from the lessor by paying to the

lessor the sum of twenty-five thousand dollars (25,000) in gold coin of the United States; . . .

"The provisions herein as to the delivery of three hundred (300) horse power at the generating plant to be installed on the premises herein described contemplates the delivery of an uninterrupted current, but the lessees shall not be liable for damages that may arrive from operating and physical causes beyond its control" (See Record, pp. 1182-1184).

The provisions occurring in the deed of April 22, 1911, are as follows:

"And, whereas, thereafter on the 31st day of October, 1910, the Oxford Mining Company, party of the first part herein, duly elected to take the electric current provided for in the said indenture and agreement, which said election was accepted and agreed to by the parties of the second part hereinbefore mentioned on the said 31st day of October, 1910" (See Record, p. 765).

And the provisions occurring in the contract relating to the Gilbert contract, which also bears date of April, 1911, are:

"And, whereas, thereafter on the 31st day of October, 1910, the water power plant provided for in the fourth paragraph of said agreement was duly erected and equipped prior to that time, and the party of the first part duly elected to take the current of electric power provided for in said indenture and agreement of October 14, 1909, which said election was agreed and consented to by the parties of the second part; . . .

"Now, therefore, pursuant to the agreement of the parties hereto of October 31, 1910, and the

election of the party of the first part to take the electric current provided in the agreement of October 14, 1909, formal conveyance of the said property has been made by the Oxford Company to the parties of the second part;

"Now, therefore, in consideration of the premises, it is hereby agreed that if the parties of the second part hereto are deprived at any time by Alaska Perseverance Mining Company, Joseph T. Gilbert, his or their successors or assigns, of any of the water now appropriated and used by the second parties out of Sheep Creek at the power plant, then the party of the first part shall only be entitled to the three hundred (300) horse power of electric current provided in the agreement dated October 14th, 1909, decreased by the number of horse power that could be generated by the second parties at their plant, with the water of which the second parties may have been deprived by the Alaska Perseverance Mining Company, Joseph T. Gilbert, his or their successors or assigns" (Record, pp. 1044; 1050).

In going over these various provisions, it will be noted that in each instance the thing referred to as the thing to be furnished, is a current from which mechanical power can be developed, as distinguished from mechanical power already developed and ready for use.

The first provision in the contract of October, 1909, reads: "and if at any time after two (2) years from "the date hereof the lessor or its assigns shall elect "to take a *current* of not to exceed three hundred "electric horse power which shall be taken from and "at the generating plant to be installed upon the

“leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said *current* to the lessor or its assigns” (Record, p. 1064).

The second provision reads as follows: “If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse power hereinbefore mentioned” (Record, p. 1064). Here the word *current* is not repeated, but by describing the thing referred to as *hereinbefore mentioned*; whatever was said about the thing referred to in the previous recital becomes a part of this recital in the same manner as though it were repeated in full instead of being abbreviated as is often done, not only in connection with the drafting of contracts, but in all other kinds of writings as well.

The third provision likewise relates back to what had been previously said in the following language: “The provisions herein as to the delivery of the three hundred (300) horse power at the generating plant to be installed on the premises herein described contemplate the delivery of an uninterrupted *current*” (Record, p. 1066). Under this provision, however, it is clearly stated that the thing to be delivered or dealt with is a *current*.

Again, in the deed executed on the 22nd day of April, 1911, occurs the following provision: “And,

“whereas, thereafter on the 31st day of October, 1910, “the Oxford Mining Company, party of the first “part herein, duly elected to take the *electric current* provided for in the said indenture and agreement” (Record, p. 1027). Here again, the language used is clear and unequivocal. The thing dealt with being electric *current* provided for in said indenture and agreement, meaning the agreement of October, 1909.

Again, when the remaining agreement bearing the same date as the deed was executed, the parties first use this language “and the party of the first part duly elected to take the *current* of electric power provided for in said indenture and agreement” (Record, p. 1049). In a succeeding paragraph this language is used: “And the election of the party of the first part to take the *electric current* provided for in the agreement” (Record, p. 1050). And a still subsequent provision, provides as follows: “then the party of the first part shall only be entitled to the three hundred (300) horse power of *electric current*” (Record, p. 1050).

It will be seen, therefore, that whenever the parties dealt with the matter under consideration, the dealings always referred to the current as the thing to be furnished.

Again, the first provision in the contract of October, 1909, provides that the current shall be taken from and at the generating plant (Record, p. 1064);

this provision would preclude the idea that the thing referred to was developed mechanical power as distinguished from current capable of being developed into mechanical power, even though the further provisions of the contract were not clear upon this point; for developed mechanical power is not developed at the generating plant. Generating plants generate current, not developed mechanical power. So also the provision is clear upon the point that this current is to be taken by the Oxford Company from and at the generating plant to wherever it sees fit, and developed or used in whatever manner it sees fit. However, all the other provisions of the various contracts are so clear upon this point that even though this provision did not occur in the contract, no question could arise, but what the parties intended that the thing to be furnished on the one side and received on the other was to be a current from which power could be developed, and not mechanical power already developed. And this is also the construction placed upon the contract by all the parties of the action.

When the Oxford Company got ready to use the current it built its transmission lines so as to connect them with the bus bars of the generating plant and convey the current by means of these lines to the place of intended use, and there installed its own motors to develop it (Record, pp. 1077, 1078—Finding of Fact IX). Upon this point there is no con-

troversy, and the matter would not have been referred to in detail were it not for the fact that the trial court misinterpreted the contract in this regard and that such misinterpretation led the court to the erroneous conclusions reached.

It will be noted from the decree that the trial court held that under the terms of the contract the appellee was entitled to 300 actual or real horse power (Record, p. 1093), irrespective of the quantity of electric current that it might require or use in developing such power. Hence, the thing to which the horse power as a unit of measurement is applied by the trial court is not the current from which the mechanical power is developed, but to the power which is actually developed.

At first glance, it might seem as though it would make but slight difference where the energy was measured whether in the current or in the developed mechanical power, and it is in point of fact true that it would make little or no difference if the current were developed, as it is claimed by appellants that it should be, in such a manner that all the energy existing in the form of electric current were transformed into energy existing in the form of mechanical power; but the appellee has installed a motor that does not develop all the energy existing in the form of electric current, into energy existing in the form of mechanical power, but leaves in the circuit a large per cent. of the energy existing therein undeveloped, and

in that manner wastes so much of the current as is not developed into mechanical power.

The appellee claims it has a right to do this; that it is immaterial how much current it uses up in developing 300 horse power so long as it does not develop in excess of 300 horse power, and the trial court took this view of the matter.

An electric current as generated by a generator, has two characteristics, that is to say, it has pressure and it has flow. The pressure is spoken of as the voltage, and the unit by which its pressure is measured is the volt. The flow is referred to as the amperage and the unit by which the flow is measured is the ampere.

One ampere multiplied by one volt is equivalent to one watt, which is the unit of electric power, and 746 watts constitute one electric horse power.

In order, therefore, to measure an electric current by the unit electric horse power, we need only to multiply the number of volts by the number of amperes, which gives us the number of watts, and then divide the product so obtained by 746, this being the number of watts contained in an electric horse power, and in the case of a three phase circuit, such as the circuit maintained by the appellant companies, it is necessary to multiply the result thus obtained by the square root of three.

56.2 amperes, with a voltage of 2300 impressed upon a three phase circuit, constitutes a current of 300 electric horse power calculated in this manner, and

it is such a current so measured that the appellants have made available for the use of the appellee in compliance with the terms of the contract before the court. The current so furnished, if developed by means of a synchronous motor, or by means of a motor of the induction type supplied with a synchronous condenser, can be and will be developed into 300 mechanical horse power, and the same result can be and will be obtained if the current is applied for lighting purposes.

The appellee, however, is developing the current furnished into mechanical power by means of a motor of the induction type not supplied with a synchronous condenser, and is conveying the current a distance of four or five miles from Sheep Creek to the Perseverance Mines.

The use of this type of motor, as well as the use of this long transmission line results in a phase displacement. That is to say, the inductive effect of motors of this type so distorts the electric current that a portion of it, depending in extent upon the extent of the phase displacement, is rendered useless, and the use of the transmission lines has a like effect, all other things being equal, the longer the line the greater the phase displacement. It must here be noted that the extent of the phase displacement in the electric circuit is further affected by the transformers and other apparatus used in connection with the development of the current into mechanical power as well as

by other matters connected with the condition of the load. And it should further be noted that this phase displacement is in no wise the result of, nor is its extent in any wise affected by, any apparatus connected with the generating plant.

(See Evidence, Record, pages 506; 371.)

Where motors of the induction type are used not supplied with synchronous condensers, the extent of the phase displacement depends in the first instance upon the efficiency of the particular motor or motors used, the length of the transmission wires, the transformers and other apparatus used in connection with the development of the current into mechanical power and upon the manner in which such motors, transmission wires and other apparatus are installed and operated, and after the apparatus is placed in operation, the extent of the phase displacement varies from moment to moment, depending upon the conditions of the load.

(See Evidence, Record, pages 507, 508.)

(See Evidence, Record, page 362.)

(See Evidence, Record, page 452.)

The term "power factor" is employed to indicate the per cent. of the apparent power, that is to say, the power appearing in the circuit in the form of electricity that will or can be developed by the particular apparatus employed in developing the current into

mechanical power. That is to say, the power factor depends altogether upon what per cent. of the current is so distorted as to render it useless. Thus, the ratio between the power that can be developed from a circuit and the power that will be developed from it is the result of the particular form or type of apparatus employed; the greater the distortion of the current or phase displacement, the lower the power factor. That is to say, if 25 per cent. of the current is so distorted as to render it useless, the power factor is 75 per cent. If half of the current is so distorted as to render it useless, the power factor is fifty per cent. If all of the current is so distorted as to render it useless, the power factor is zero. The power factor then depends upon the extent of the phase displacement and may be anything from nothing to 100 per cent.

The phase displacement from the use of motors of the induction type and the use of other apparatus having an inductive effect, such as the motors and apparatus used by the appellee, can be obviated by installing a synchronous condenser operated in such a manner that all the energy appearing in the circuit as apparent power will and can be developed into mechanical power. That is to say, the apparatus employed by the appellee, if supplied with a synchronous condenser, could be operated in such a manner that the result will be the same as though a synchronous motor had been installed.

Under the decree of the court, however, the ap-

appellee has a right to install not only motors of the induction type not supplied with a synchronous condenser, but it has a right to use the most inefficient kind of motors of that type, motors which are so inefficient, if it should see fit to use them, that the current would be distorted to such an extent that no mechanical power whatever could be developed from it. Further than this, the appellee, under the decree, has the right to transmit the current to whatever point it may see fit, even if the transmission would have the effect of so distorting the current that no power whatever could be developed from it. And further the appellee is not required to exercise even the slightest degree of skill or care either in installing its motors, transmission wires, transformers and other apparatus, or in operating the same, nor are any restrictions placed upon it by which it is required in any manner to regulate the conditions of the load. It has the right to use whatever motor it may see fit to develop the power at any place whatsoever and in any manner whatsoever, and to draw from the bus bars of the appellants current sufficient to enable it to develop 300 mechanical horse power by means of whatever apparatus at whatever place and in whatever manner it sees fit.

The quantity of current that the appellee has a right to receive and which the appellants are compelled to furnish and supply under the decree of the court, does not depend in any manner upon the terms

of the contract itself. It is not measured by any unit of measurement whatsoever. It is entirely unlimited in extent, both as to pressure and flow and depends entirely upon the convenience or caprice of the appellee. The appellee may, if it sees fit, install apparatus, and so develop the current into mechanical power that 56.2 amperes will supply it with 300 mechanical horse power, or it may so develop it as to require not only all the current generated at the appellee's generating plant, but a current of much greater volume and pressure than the current there generated in order to develop the 300 mechanical horse power to which the court decrees it to be entitled.

It will be seen, therefore, that it is a matter of great importance to determine in connection with the construction of the contract in question, whether the thing to be furnished, made available, and measured on the one hand and received on the other under the contract is *electric current* or *mechanical power*.

True, the court does not require the appellants to develop the power and furnish the developed power, but only requires the appellants to furnish the current from which the appellee will develop the power, but the court does not attempt to measure the current to be furnished, but measures the developed power, so that the effect of the court's construction of the contract is that the thing to be furnished and measured is not current but mechanical power, for no limit upon

the quantity of current to which the appellee is entitled under the contract is in any wise fixed by the court.

The language of the contract is clear and explicit. It provides that the thing to be supplied is an electric current of not to exceed 300 electric horse power. If, then, the thing to be furnished on the one hand and to be received on the other is an electric current defined, described, and limited as to quantity and flow, as a current of not to exceed 300 electric horse power, it only remains to be seen what current would fill the requirements of a current not to exceed 300 electric horse power.

It will be seen that the unit by which the current to be made available is to be measured is the electric horse power.

The electric horse power can be used as a unit by which current is measured. When so used, as we have already seen, the volts are multiplied by the amperes, which gives us the number of watts, and the product divided by 746, this being the number of watts in an electric horse power.

Mr. Foster, in his "Hand Book on Electricity," commencing at the foot of page 5, defines electric power and gives the formula for calculating the same as follows:

"Electric power (symbol p) is measured in watts, and is represented by a current of 1 ampere under a pressure of 1 volt, or 1 Joule per second.

The watt equals 107 absolute units, and 746 watts equals 1 horse power. In electric lighting and power the unit kilowatt or 1000 watts is considerably used to avoid the use of large numbers."

It will be observed from a reading of the contract that the current is to be taken from and at the generating plant, that is to say from the bus bars of appellant.

Now, it is the contention of appellants that the current so taken from the bus bars is to be measured by the unit electric horse power, and that whenever a current containing 300 of such units is drawn from the bus bars, the contract is complied with.

Under the decree of the court, the *current* as so drawn is not to be measured at all, but the *output of the motor* is to be measured and the unit horse power is to be used in measuring such output.

This view is clearly erroneous, since the output of the motor is not current, but mechanical power, and the thing to be furnished is *current* at the bus bars at the generating plant.

Clearly, if it was the intention of the parties to furnish a current, as we have shown that it was, it must have been the intention of the parties to measure the thing to be furnished, and this intention cannot be carried out except by measuring the power appearing in the current, that is to say, the "apparent power."

To illustrate: We will suppose that the appellant companies were engaged in the business of cutting saw

logs; that they made a contract with the appellee under which it would be entitled to take from its log boom a quantity of logs not to exceed 300 thousand feet. Now, the unit by which the logs to be furnished would have to be measured would be 1000 feet. This unit can be employed in measuring logs, just as the unit horse power can be employed in measuring current. It likewise can be employed in measuring lumber, the thing taken from the logs, just as the unit horse power can also be employed in measuring mechanical power, the thing developed from the current.

Now, logs can be cut into lumber by means of band saws so as to convert practically all the material existing in the log into lumber, or by means of circular saws so inefficient as to waste a large per cent. of the material contained in the log, just as current can be developed into mechanical power by means of synchronous motors or motors of the induction type, supplied with a synchronous condenser, by which the energy existing in the form of current will be developed into energy existing in the form of mechanical power, or by means of motors of the induction type carelessly operated, installed and kept in a poor state of repair, so that a large per cent. or even all of the current is distorted, rendered useless and wasted. That is to say, a saw mill can be operated at a lumber factor of much less than 100 per cent., just as a motor can be operated at a power factor of less than 100 per cent.

To carry the illustration further, the log contains no lumber. It merely contains the wood that can be transformed into lumber. In other words, the lumber contained in the log is apparent lumber and not real lumber. It appears there in the form of wood. It is merely apparent, and it is only after it has been cut into lumber that the lumber becomes real. Just so in the case of an electric current. The energy existing in the current is only apparent power. It does not become mechanical power, or power that can do mechanical work until it has been developed by means of a motor. Until it is so developed, the mechanical power existing as energy in the form of electricity is only apparent, just as the lumber existing in the form of wood contained in the saw log is only apparent.

Now, let us suppose that the appellee was operating a saw mill equipped with a circular saw of very poor efficiency, so that only one-half of the lumber apparent in the saw log could be cut into actual, real lumber, which is equivalent to saying that the appellee would be operating a circular saw having a lumber factor of 50 per cent. Would any court hold that under the supposed contract for the delivery of logs, the appellee would be entitled to sufficient logs to enable it to cut 300 thousand feet of lumber from the logs furnished with its inefficient circular saw operating at a lumber factor of 50 per cent.? If the court would not so hold, then why should the court hold that the appellee being entitled to a current of electricity of 300 electric

horse power, shall have the right to whatever current it may require to develop 300 horse power by means of an inefficient motor having a power factor of probably 50 per cent.?

Nor does it help the matter any to say that the appellee when operating at a power factor of less than 100 per cent. is not using that portion of the electric current which has been distorted because of the use by it of appliances that result in a phase displacement, and that such portion of the current is permitted by it to remain in the circuit and there circulate. Such a contention would be equivalent to saying that the saw mill operator whose mill operated at a power factor of less than 100 per cent. did not appropriate the saw dust wasted by this inefficient machinery. Further, the contract itself settles the question as to where the current is to be measured. It is expressly provided in the contract that the current shall be taken from and at the generating plant. It is at the generating plant, then, that the current must be measured, and at the generating plant all the current presents itself for measurement including that part of the current which has been distorted.

So far in this discussion, we have measured the current by means of the unit electrical horse power, and have done so in the only manner that this unit can be employed as a unit for measuring current. However, if instead of using as a unit of measurement an electrical horse power as we have hereto-

fore done, an attempt should be made to measure the current in units of mechanical horse power, the result would be the same.

A mechanical horse power as a unit for measuring mechanical power consists of that quantity of power which will lift 550 lbs. one foot per second.

Now electric current as such is not mechanical power of which the mechanical horse power is the unit of measurement, nor is power as such electric current; but while power and electric current are not the same thing they are different forms of the same thing—energy. Energy in a certain form manifests itself as mechanical power, the only difference in the two forms of energy being that in the case of an electric current, the energy is not available for doing mechanical work, while energy in the form of mechanical power is available for doing such work. To transform the electric current into mechanical power it is necessary that the energy contained in the current be made available to do work. For this purpose motors and other apparatus used in connection with them are employed. Since energy in the form of an electric current can thus be transformed into energy in the form of power, electric current can be made available for the doing of mechanical work by means of a motor. The current is thus transformed into mechanical power; again the mechanical power could in turn be transformed into current by installing a generator and applying the

mechanical power thus obtained from the current to operate the generator, and produce another current equal to the first current less the slight loss resulting from friction and other causes in connection with the operation of the machines. The energy, therefore, can be readily transformed from one form into another, and while the units by which a current is measured are volts and amperes, or by what amounts to the same thing, by the products of the volts and amperes divided by 746, which as we have seen gives us the electric horse power apparent in the circuit, and the unit by which mechanical power is measured is the mechanical horse power, each can be measured by employing the unit of measurement designed to measure the other, since one is thus capable of being transformed into the other and adapt itself to the unit of measurements employed for measuring such other. It follows, therefore, that current of 300 horse power measured in volts and amperes, or in what is equivalent to the same, under the electrical horse power employed in measuring the power apparent in the circuit, is a current that contains the energy contained in 300 horse power, in other words is a current that can be transformed into mechanical power equivalent to 300 horse power. For it is fundamental that unless a current contains as much energy as is contained in 300 horse power, it cannot be transformed into it. To do this would not only require transformation,

it would require creation. If, therefore, a given amount of current can be developed into 300 mechanical horse power, it is a current of 300 horse power.

It is urged, however, that when motors of the induction type are used, less than 100% of the energy contained in the current is developed into actual mechanical power, that is to say, these motors operate at a power factor of less than 100%, and for that reason the current that would be a current of 300 horse power when developed by means of a synchronous motor, would not be a current of 300 horse power when developed by means of a motor of the induction type. This position, however, can readily be shown to be untenable. The reason that motors of the induction type do not develop 100% of the energy contained in the current into mechanical power is found in the fact that the use of these motors results in a phase displacement, and that the power factor of the motor depends upon the extent of this phase displacement; the greater the phase displacement, the less the power factor. Such phase displacement does not decrease the amount of energy contained in the current, it merely renders a portion of such energy unavailable, unless some means or apparatus is used to correct such displacement. When a phase displacement occurs, the quantity of the energy in the circuit is not affected either one way or another. The percentage of the energy ren-

dered unavailable by reason of phase displacement does not leave the circuit, but continues to circulate therein. Unless corrective devices are used, it produces no power, that is to say, the energy contained in it is not transformed into energy in the form of mechanical power, but it is and remains in the circuit nevertheless. This is proved by the fact, that as soon as a synchronous motor, a rotary condenser or other device having a similar effect is installed, the energy contained in the current which could not theretofore be transformed into mechanical power, can upon the installation of such devices be again utilized to its fullest extent and transformed into mechanical power available for doing work. And since none of these devices generate or transmit energy, it follows that the energy must have been in the current all the time and that the reason why it was not developed into mechanical power, was because the apparatus employed was not such as could develop it.

If, therefore, a current is to be supplied that contains energy equivalent to the energy contained in 300 mechanical horse power it is and remains a current of 300 horse power, regardless of the form or type of motor or other apparatus used to develop it. That is to say, if such current were developed by means of a motor operating at a power factor of 50%, only 150 horse power would be developed, but this would not change the fact that the current was

a current of 300 horse power, because energy equivalent to the energy contained in an additional 150 horse power would remain in and be left in the circuit. The phase displacement resulting from the use of the particular apparatus employed to develop the current would so affect the current that 150 horse power only could be developed by means of this apparatus, but notwithstanding this, energy equivalent to 300 horse power would be circulating in the circuit, and this energy would be available for use, and would be developed into 300 actual horse power as soon as the phase displacing the effect of the motor or other apparatus employed, was overcome by the installation of a rotary condenser or other similar device designed for that purpose. Again, if a 300 horse power motor of the induction type operating at a power factor of 50% were connected with a circuit with a view of developing 300 actual horse power, the current required would not be a current of 300 horse power, but a current of 600 horse power, for the motor would cause a phase displacement that would so affect one-half of the current flowing in the circuit that the energy contained in it would not be transformed into mechanical power, but while one half of the current would thus be rendered useless, the quantity of energy contained in the current would remain the same, and would be equivalent to the energy contained in 600 horse power, and 600 horse power could be developed from it, either by means

of a synchronous motor, or by means of a motor of the induction type supplied with a rotary condenser, or other device that would restore the synchronism of the current.

The operation of a motor at a power factor less than 100% amounts to nothing less than a *waste* of the current not developed. While the current continues to circulate in the circuit, and the electric energy (undeveloped by reason of the low power factor of the motor), remains in the circuit, generating capacity equivalent, not to the power actually developed, but to the power the equivalent of which is circulating in the circuit in the form of electric energy, is used up. That part of the generating capacity which is employed in generating current left in the circuit undeveloped, is wasted.

The Court so construed the contracts before it that appellee is given the right to install whatever type of motor it may desire at whatever place it may see fit, and to operate it in any manner that it may desire. Under the decree the appellee may, if it chooses to do so, develop all the energy in the circuit into useful mechanical power, or if it does not choose to do so, it may develop the smallest per cent of the electric energy floating into the circuit into mechanical power and demand that the quantity of electric energy furnished it be increased until the small per cent developed will supply it with the required 300 horse power.

In other words, the Appellee is given the right to drain from appellant and waste as much electric energy and current as it sees fit without the slightest loss to itself.

The power factor of a circuit is affected by the transmission wires (the longer these wires, all other things being equal, the lower the power factor) by the transformers; by the motors and other apparatus used in developing the current into power. It depends upon the length and character of the transmission wires, the character and efficiency of the transformers, the form and type of motor and other apparatus used, and varies from moment to moment according to the condition of the load. The court's decree leaves all these things entirely in the control of and to the discretion of the Appellee. Under the decree the appellee has a right to convey the current to any point without regard to the distance of such point from the generating plant. Yet the power factor of the circuit depends to a large extent upon the length of the transmission wires. It has a right to use as many transmission wires as it sees fit. Yet each transformer used affects the power factor. It has a right to use any form or type of motor it chooses, regardless of whether such motor operates at 100 per cent power factor or at any other power factor between 0 and 100 per cent.

The Appellants have absolutely no control over any of these matters. The contract provides that

the current is to be taken from and at the generating plant so that the control of Appellants over the current ceases as soon as it leaves the generating plant. Since the power factor of the circuit is thus left entirely to the control of the Appellee, it would, if the lower Court's construction of the contract is upheld, have the right not only to use but to waste the entire current generated at appellants' generating plant, and if it operated at a power factor of 19 per cent, this result would be brought about.

(See Evidence Proebstel, Record, p. 382.)

True, electric apparatus does not usually operate at so low a power factor, but it is equally true that the users of electric apparatus do not usually enjoy this remarkable privilege. If it were the usual thing for the users of electric apparatus to enjoy this privilege, it is quite reasonable to assume that the power factor of the circuits of such users would be very much lower than it now is.

The witness Proebstel testified upon the hearing (See evidence Proebstel, Record, p. 383) that he actually saw electric apparatus operated at a power factor of 20 per cent., and we confidently predict that if the decree of the lower court should be upheld, it would not be long before we would again see electric apparatus operated at a power factor at least as low as 20 per cent. This might result, even though it would not be accompanied by any wilful or vicious motives

on the part of the appellee. The power factor of the motor employed by the appellee at the present time does not much exceed 60 per cent. The witness Wallenburg testified that the power factor of appellee's circuit was at the time of the trial about 70 per cent.

(See Evidence Wallenburg, Record, p. 295.)

It was shown that on this circuit were a number of lights. These lights used up current at a power factor of 100 per cent., and in that way increased the power factor of the circuit. The motor, therefore, must have been operated at a power factor considerably less than 70 per cent., probably not more than 60. Whether this power factor of appellee's circuit is due to the fact that the motor is inefficient or to the fact that the transmission wires extend over it a considerable distance, or are not properly placed, or to some other cause in connection with the development of the power, cannot, of course, be determined, but the fact remains that the power factor of the motor employed by the appellee does not far exceed 60 per cent.

Now, all mining companies in the District of Alaska do development work, sometimes at points quite remote. Suppose the appellee had development work to do at Berner's Bay or some other point equally distant, it would certainly be to its advantage to employ this particular power instead of other power available for use, because the low power factor that would necessarily result from transmitting the current over so

great a distance would not result in any loss to itself but to the appellants. If, then, the power were used at Berner's Bay and the long transmission lines affected the power factor so as to reduce it to 19 per cent., the appellee would have under the decree of the court the unqualified and undoubted right to use all the current that could be developed at the Sheep Creek power plant of the appellants. Yet, no one can accuse the appellee of doing anything that others would not do under like circumstances. As has already been seen, the appellee under the decree of the court has the right to waste all the current that the appellant companies generate or can generate at the Sheep Creek plant, and should the appellee desire to operate at a power factor of less than 19 per cent., which it has a right to do under the decree of the court, it would not only take all the power generated at the Sheep Creek plant of the appellant companies, but the appellant companies would be required to install a larger plant so as to be in a position to furnish the current that would be required, and in the event of their not doing so, they would be in contempt of court for failing to comply with the court's decree. Not only does the appellee have the right to waste the entire output of the Sheep Creek generating plant, but as much more current as it sees fit, and it has the right to do this without the slightest loss or inconvenience to itself. It can save money by installing cheap and inefficient machinery which necessarily operates at a

low power factor. It has the right to use the current in distant and remote places so as to supply power at such remote places for prospecting and development work, and it may do this without regard to the extremely lower power factor that must result from the length of the transmission wires.

Surely the court erred in so construing the contracts before it. Even if the contracts were open to such construction, the court was not justified in so construing them, for the contracts admit, as we have seen, of a more reasonable construction, and it is a well settled rule of construction that where an instrument admits of two constructions, one of which is reasonable and the other unreasonable, the court will adopt that construction which is reasonable.

“Where the language of a contract is contradictory, obscure, or ambiguous, or its meaning is doubtful, so that the agreement is fairly susceptible of two constructions, the more natural, probable, and reasonable interpretation should be adopted. *Bell vs. Bruen*, 1 How., 169, 186, 11 L. Ed., 89; *Pressed Steel Car Co. vs. Eastern Ry. Co. of Minnesota*, 57 C. C. A., 635, 637, 121 Fed., 609, 611; *American Bonding Company vs. Pueblo Investment Company*, 80 C. C. A., 97, 108, 150 Fed., 17, 28, 9 L. R. A. (N. S.), 557, 10 Ann. Cas., 357; *Coghlan vs. Stetson* (C. C.), 19 Fed., 727, 729; *Jacobs vs. Spaulding*, 71 Wis., 177, 186, 36 N. W., 608; *Russell vs. Allerton*, 108 N. Y., 288, 292, 15 N. E., 391.”

Barndall Oil Co. vs. Leary, 195 Fed., 731.

Again the construction placed upon the contracts by the court not only leads to unreasonable conclusions, but it leads at the same time to unjust and inequitable results. The appellants have expended many thousands of dollars in connection with the construction of the Sheep Creek generating plant and are constantly spending large additional sums in connection with its maintenance and operation. The appellee under the contract is entitled to the first 300 electric horse power that can be developed from the current generated. For a considerable portion of the year this is all the current that the generating plant can generate owing to the shortage of water. All the appellants get is the surplus and they get only such surplus when it exists.

All that the appellee's predecessor gave for its right to the use of a current of not to exceed 300 electric horse power was a water right and some other pieces of property upon which the contract places a value of \$25,000, which, calculated at 8 per cent., would make the power at the present time cost \$6.66 per horse power year.

The contract itself, then, places the value of the current to which the appellee is entitled at \$25,000. Another expressed provision in the contract fixes the rental of this current at \$125 per month, which is equivalent to \$5 per horse power year. The evidence shows that the Alaska Juneau Gold Mining Company, a corporation under the same management with the appel-

lant companies, is temporarily supplied with electric current by the appellant companies to do a certain piece of development work. This company pays \$65 per horse power year for the current supplied it and the current is calculated and measured at unity or 100 per cent. power factor; that is to say, the current supplied the Alaska Juneau Gold Mining Company is measured in the same manner that it is contended by appellants the current to be furnished the appellee should be measured, which in fact is, as we have shown, the only manner in which current can be measured.

See Evidence Kinzie, Record, p. 555, and Contract between Alaska Juneau and others, Record, p. 793.

The Alaska Juneau Company is not given the privilege of wasting any of the current supplied it. It uses a motor of the induction type on its circuit, but it appears that it pays for and the *current* furnished it, regardless of how much or how little *power* it actually develops from such current. Yet, it is paying appellant companies for the current furnished \$65 per horse power year.

If the contract admitted of any such construction as that placed upon it by the Court, the *low* valuation placed upon the current to be furnished by the parties themselves according to the expressed provisions of the contract certainly shows that the parties never in-

tended that the appellee's predecessor should be endowed with the remarkable rights and privileges that are conferred upon the appellee by the court's decree. The generating plant erected and maintained by appellants at Sheep Creek generates, when operated at its capacity, an electric current of 2600 electric horse power; that is to say, 2600 horse power can be developed from the current generated by the generating plant, if all the current is developed into useful mechanical power and none of it is wasted as the result of phase displacement. When, however, the current generated is developed by apparatus operated at a power factor of 19 per cent., the entire current which can be generated at the Sheep Creek power plant of 2600 horse power capacity is required to develop 300 horse power. Clearly, it would be more equitable to permit the appellants to enjoy the use of the surplus current generated at their generating plant (after deducting a current of 300 electric horse power measured as appellants contend it should be measured), than merely to allow the appellants what is left after the appellee has taken all the current required to develop 300 horse power by such methods or means as it might see fit to adopt.

Here again we call to our aid another well known rule of construction which provides that where an instrument admits of two constructions, one of which would be inequitable and the other equitable, the court will adopt that construction which is equitable as

against that which would work an injustice and fail to do equity as between the parties.

"When a court of law is construing an instrument, whether a public law or a private contract, it is legitimate, if two constructions are fairly possible, to adopt that one which equity would favor."

Wash. & Idaho Rd. vs. Coeur d'Alene Ry. Co., 160 U. S., 77, 101:

Again, the decree of the court has involved the whole matter in a maze of uncertainty, since the power factor depends upon so many things, including the length and character of the transmission wires, the transformers, the type and character of motors employed, the manner in which these are installed and operated, and the changes from moment to moment depending upon the conditions of the load. The court's decree places the appellants in a constant state of uncertainty, since they can never know from moment to moment what the current demands will be at the next moment. They must of necessity regulate their own operations in such a way that they will always have a surplus supply of current on hand with which to meet the demands that may be made upon them at any moment by a change in the power factor on appellee's circuit; the extent of this change in the power factor, and consequent additional demands for current can, of course, never be foretold. This feature of the decree not only adds to the inequitableness of

the construction placed on the contract by the court, but it also leaves the decree so uncertain as to make it impossible for the appellants to comply with it on the one hand or the court to enforce it on the other. The quantity of current to be delivered is not fixed or determined by the decree of the court. It may be much and it may be little. It may be 56.2 amperes as the appellants contend that it should be, and on the other hand it may require the entire capacity of the Sheep Creek generators, or, if the power factor is low enough, it may require the capacity of several such generators. The quantity of current, therefore, does not depend upon the decree of the court, but upon the ever changing and ever fluctuating power factor of appellee's circuit. Aside from the fact that it would require a veritable jumping Jack in constant attendance to set and re-set the circuit-breaker as the demands for current changed from moment to moment, it would be clearly impossible to show by evidence at any time whether or not the appellants had complied with or had violated the court's decree.

Under the court's decree there is no fixed unit by which the current to be furnished is to be measured. The unit is whatever the appellee chooses to make it, and the quantity of current to be furnished is not only left wholly uncertain, but wholly undetermined by the terms of the decree. Clearly, the parties could not have had in mind such a construction when the contract was made. The making of such a contract would

be equivalent to making a contract for the delivery of dry goods in which the seller agreed upon a fixed consideration to deliver to the buyer let us say 300 yards of a certain class of dry goods, with the understanding that the number of feet each yard should contain at the time the dry goods were to be delivered and measured was left entirely to the will and discretion of the buyer so that the buyer might exact dry goods measured with a yard stick three feet in length, or he might with equal propriety demand that the dry goods be measured with a yard stick 100 feet in length.

On the other hand, if the current to be supplied were measured and calculated in the manner that the appellants claim it should be measured and calculated, all uncertainty would be removed and the decree entered would be certain and definite. The court would be enabled to say definitely and with certainty what the quantity of electric current contracted for was, and thus place the parties in a position where one party would know what it would be required to furnish, and the other what it would be entitled to receive at all times and under all circumstances. While we do not for a moment concede that this contract is open to two constructions, or that the construction placed upon it by the court is a possible construction, yet, if such a construction were possible, we would be able to determine the matter by calling to our aid another well settled rule of construction that whenever an instrument is such that it admits of two constructions, one

of which will lead to certainty and the other to uncertainty, that construction which is most certain will be adopted.

It must be borne in mind that the contract before the court is not a power contract. The obligation is not to furnish power, but to furnish current, nor is it a power contract in the sense that that term is frequently used as a contract between a power company on the one hand and a customer on the other; when such contracts are made, the customer has certain definite power demands which must be provided for, and the power company contracts to supply such demands. The contract may, of course, be for a definite quantity of current, but in many cases, especially where power is sold to small customers, the power companies agree to furnish the fixed amount of power.

When contracts of that character are executed the customer has a definite use to which the power bargained for is to be applied, a definite way of applying it and a definite place at which it is to be developed, so that the question of what the power factor will be, can be calculated and determined upon at the time the contract is executed, and the rate to be charged can be passed upon and calculated from the amount of power actually developed, or it can be based upon the quantity of current used in developing it. Where small quantities of current are sold and various kinds of small motors are used for loads the extent of which is frequently difficult to determine in advance, con-

tracts are undoubtedly made with great frequency in which it is stipulated that the actual power developed is to be paid for, but in such contracts will be found also the provisions providing that the apparatus used in developing the power shall not be operated at less than a fixed power factor, or what amounts to the same thing, the contracts will be found to provide expressly how and where the power is to be used and what apparatus is to be employed in developing it. But where these provisions are omitted in the contract, it is assumed that the parties dealt with reference to a unity power factor or a power factor of 100 per cent. That is to say, in calculating the amount to be paid for the power used, the price fixed in the contract will be regarded as the price per kilowatt developed at unity power factor. If the motor developing it operates at a power factor less than unity, the price per kilowatt will be accordingly increased. This rule follows because no other rule would be possible. When a unity power factor is assumed as having been the power factor with reference to which the contract was made, or when we say that a unity power factor was assumed, we are using an expression that is not technically correct, for in such cases nothing is in fact assumed, the question of power factor does not in reality enter into the construction of the contract at all. One party agrees to furnish to another electric energy. The law will presume that such party will neither waste nor dissipate it without any express per-

mission to that effect. And unless he wastes or dissipates it, the electric energy furnished him will supply him with the equivalent in mechanical power. The term unity power factor simply means that the electric energy contained in the circuit, and which appears there as so much power (hence, the term apparent power) is a unit with the electric energy contained in the mechanical power developed therefrom. The term is equivalent to the term 100 per cent. power factor, which, of course, means 100 per cent. of the electric power contained in and appearing in the circuit as actually developed into power available for doing work. In other words, where a unity or 100 per cent. power factor occurs, all the energy put in at one end in the form of electricity is taken out on the other end in the form of power available for doing work. The legal presumption of course would be that this would take place unless it were otherwise stipulated in the contract, hence when it is assumed that the parties contracted with reference to a unity power factor, no assumption is really indulged in, but resort is merely had to an ordinary well-known legal presumption. On the other hand, if a power factor less than 100 per cent. were assumed as having been intended, the court would have to presume that the parties intended that a certain amount of the current furnished was to be wasted or dissipated.

And it may be said here, that while in certain cases it may be an advantage to install apparatus that is

not operated at unity power factor for reasons applicable to such specific cases, it is nevertheless true that where such installation is made, a part of the current is so affected as to render it useless, which as we have already seen is equivalent to wasting or dissipating it.

The necessity of assuming in connection with the construction of contracts (where power is contracted for without reference to the amount required to develop it), that all dealings (where no power factor is mentioned), are intended to relate to a power factor of unity or 100 per cent. is a practical one. And this is in accordance with the rule adopted by electrical engineers, as testified to by such men as Mr. Kennedy, the assistant superintendent of these companies; Mr. Proebstel, the electrical engineer in charge of their electrical operation; Professor Cory, professor of electricity in the University of California; Mr. Davis, engineer in charge of the Pacific Coast division of the General Electric Company; Mr. Heise, engineer in charge of the Westinghouse Company; Mr. Quinn, engineer in charge of the Allis-Chalmers Company, and Mr. Hunt, a consulting engineer of well known reputation. The position occupied by all these men qualified them to speak authoritatively upon any subject connected with electricity.

(See evidence Kennedy, Record, p. 461.)

(See evidence Proebstel, Record, p. 370.)

(See deposition Cory answer to Int. No. 11, p. 819.)

(See deposition Davis answer to Int. No. 11, p. 858.)

(See deposition Heise answer to Int. No. 11, p. 934.)

(See deposition Quinn answer to Int. No. 11, p. 963.)

(See deposition Hunt answer to Int. No. 11, p. 872.)

All the reasons that compel those construing power contracts which are required to deliver *power* as distinguished from *current* to assume a unity power factor, apply to the construction of the contract before the court, but any other course is impossible. This is not a contract to furnish power, but a contract to furnish current, nor is it a contract between a power company and a customer.

The evident object of the contract was to divide the current to be generated between the parties to the contract. Whatever the size of the generator installed might be, the current generated would be a current from which mechanical power equal to the capacity of the generator measured in horse power could be developed at unity power factor. Clearly in making a division of the current, the parties must have had in mind the unit of measurement by which the total quantity of current generated would be measured, and that unit would necessarily be a kilovolt ampere or its

equivalent measured by the unit of mechanical power, which would be horse power at unity power factor.

That portion of the decree by which it is decreed that the appellee is entitled to peaks, surges, or starting currents which exceed a current of 300 electric horse power (such excess peaks, surges or starting currents to be used in connection with the starting of apparatus), places no limit upon the extent of these peaks, surges or starting currents. No matter how large or small these may be, whether slightly in excess of the running current or so much in excess thereof as to require all the current generated at the Sheep Creek plant or even many times the current generated at that plant, the appellants much furnish them. The only limitation that the court places upon these peaks, surges, or starting currents is that they shall not exceed 30 seconds in point of time and shall be used for starting purposes, limitations which as we shall hereafter endeavor to show are of little or slight advantage to the appellants since they will be required to keep in reserve this excess current at all times in order to be able to meet the demands when made for thirty seconds and since the starting currents required by various types of apparatus and by the same apparatus when operated under different conditions, vary so greatly that the limitation furnishes no assistance in calculating what the demands for excess currents will be at any time or at any moment.

The first thing to do in ascertaining whether or not

the trial court was correct in so construing the contracts before it as to look to the contracts themselves and see what is there said with reference to the matter of the provisions of the three contracts relating to the current to be furnished, have already been stated at length in this brief in connection with the discussion of the subheading next preceding, and will not, therefore, be repeated here.

The contract of October, 1909, was the first under which the rights of the parties in regard to this matter were defined. The controlling provision in the contract which was clearly intended to define, limit and circumscribe the rights of the parties with reference to the matter now inquired about, read as follows:

“If at any time after two (2) years from the date hereof the lessor or its assigns shall elect to take a current of *not to exceed* three hundred (300) electric horse power which shall be taken from and at the generating plant to be installed upon the leased premises hereinbefore described, the lessees undertake, covenant and agree to deliver said current to the lessor or its assigns upon the execution and delivery by the lessor or its assigns to the lessee of a deed or deeds conveying said leased property herein described to the party of the second part.”

All the other provisions contained in this agreement, as well as the provisions contained in the subsequent agreements refer back to the provision just quoted.

The language of this provision is clear and explicit. It does not admit of more than one construction. It states in express terms that the current to be taken is

a current of *not to exceed* 300 electric horse power. No words contained in the English language could be employed that would more clearly and explicitly limit the current to be taken to 300 electric horse power. To contend that the plaintiff would be entitled, under this provision, to starting surges or peaks of more than 300 electric horse power for the reason that these surges or peaks would be of short duration, looks almost like quibbling.

In order to reach this conclusion, the following process of reasoning must be resorted to: a starting surge or current which actually and in point of fact exceeds 300 electric horse power, does not exceed 300 electric horse power, because it is only drawn for a short period of time. Nor can it be argued that because two subsequent provisions in the contract refer back to this first provision, and do not again contain this limitation "of not to exceed 300 horse power," the limitation should be read out of the first provision. It will be observed that the next time reference is made to this current in the contract, the parties expressly refer back to this first provision. The language employed is: "If prior to the expiration of nine years from the date hereof the lessor does not elect to convey to lessees or their assigns the property herein leased and accept in full consideration therefor the right to the use of the three hundred (300) electric horse power *hereinbefore mentioned*." By employing the words "*hereinbefore mentioned*" the

parties avoid the necessity of again defining in detail the current to be delivered and all the limitations imposed upon that current by the first provision are expressly imposed upon it by reference to the first provision made by the second provision. This would follow without such express reference, since it is a rule of construction that where inconsistent clauses occur in a contract the earlier provisions prevail, and the later and repugnant provisions are disregarded unless the repugnant provisions can be reconciled so as to give effect to all the provisions contained in the contract.

Lachmund vs. Lope Sing, 102 Pac., 598.

There is, however, nothing inconsistent in these two clauses. The first provides for "not to exceed 300 electric horse power," and the second refers back to the first provision for 300 electric horse power. Now, 300 electric horse power does not exceed 300 electric horse power; hence there is no repugnancy.

Nor is the contention sound that 300 electric horse power cannot be utilized unless starting surges or peaks in excess of 300 electric horse power are provided. In the first place, even though the contentions were correct that starting currents in excess of the running currents were necessary in order to start the machinery, it would not follow that a current of 300 electric horse power could not be utilized without permitting starting currents in excess of 300 electric horse power. It would simply follow that the 300 electric

horse power could not be utilized at all times, but could be utilized only when the machinery was being started. While this might not be utilizing the full amount of the current all the time, it would be utilizing the current.

Let us suppose that under the contract, the appellants were required to furnish the appellee 300 horses instead of 300 horse power. Now, 300 horses would be able to pull, if they were doing their utmost, a much heavier and larger load than they could start. Let it be supposed that it would require 900 horses to start a load that 300 horses doing their utmost could pull. No one would argue that under a contract to furnish 300 horses, or to furnish the use of 300 horses, the appellants would be required under the circumstances mentioned to furnish the appellee with 900 horses at such times as it might desire to start the load in order that it might be able to utilize all the pulling strength of the 300 horses at all times. Yet, there would be as much reason in contending that the appellee would be entitled to 900 horses to start the load which would require 300 horses to pull after the same was started as there is in contending that the appellee would be entitled to a current of 900 electric horse power under a contract to provide it with a current of 300 electric horse power, assuming that it would require three times the current to start its machinery that would be required to operate it.

However, the contention that current in excess of

300 electric horse power is necessary when the machinery is being started in order to use up and apply a current of 300 electric horse power while the machinery is in actual operation, is not correct. For by installing proper devices and applying the current to use in a proper manner the starting current required is not greater than the running current.

If several small motors are installed and started one at a time, the larger ones first, no difficulty would, of course, be experienced in starting such small motors without regard to the form or type in use and without supplying the same with starting devices; but where one large motor is used requiring the entire quantity of current provided, that is to say, where a motor of 300 horse power is installed upon a circuit supplied with no more than 300 electric horse power, starting devices would have to be provided, or other methods such as the removal of the load from the motor when being started, would have to be resorted to. More especially is this true in the case of a squirrel cage motor which requires a much larger starting current than a motor of the "slip ring" type or any other type of motor made; but even the form K squirrel cage motor of the induction type of 300 horse power can be started with a current not to exceed 300 electric horse power, provided that either the load is taken off at the time the motor is started or the motor is sup-

plied with a suitable starting device manufactured for that purpose and in general use.

(See evidence Cory, Deposition, questions 24 and 25, p. 821.)

(See evidence Quinn, Deposition, questions 24 and 25, p. 974.)

(See evidence Davis, Deposition, questions 24 and 25, p. 866.)

(See evidence Heise, Deposition, questions 24 and 25, p. 931.)

(See evidence Thane, Rec., p. 193.)

However, the provision in the contract merely refers to the use of a current of 300 electric horse power, and it is left entirely to the appellee to use it as it sees fit. It may make a very poor use of it by installing a motor of comparatively small size having a large starting torque and starting it under full load conditions so as to use up the greater part of the current of 300 electric horse power in starting the small motor, or it may make the best possible use of the current by installing a number of small motors, or a large motor and either supplying the same with proper starting devices or removing the load when the motor is started. In any event, whether the current is used as starting current or used as a running current, the appellee would get the use of a current of 300 electric horse power. None of the witnesses called by the plaintiff denied this fact.

Nor will it do to say that since this demand for excessive current is momentary and of short duration so that the quantity of current actually overdrawn is exceedingly slight, therefore the appellants should be required to furnish these starting surges or peaks, their value to the appellee being greater than their cost to the appellants. Aside from the fact that the appellee's necessities can in no case limit the appellants' rights, it is not a fact that the appellee needs this starting surge or current, nor is it a fact that their value to the appellee is greater than their cost to the appellants.

We have already seen that the appellee could utilize the current either by installing more than one small motor or by using a large motor and disconnecting it with the load when starting it, or if that is not practical by supplying the motor with starting devices. True, this might cause the appellee slight inconvenience, and possibly if starting devices were installed some slight expense, but the expense thus necessarily incurred would in any event be trifling. It would simply place the appellee in a position where it would be required to adopt business and workmanlike methods in the place of methods that are at once wasteful and slipshod. On the other hand, if the appellants were required to furnish these starting surges or currents whenever the demand was made for them, they would be obliged to keep in reserve at all times suf-

ficient generating capacity to generate such currents, for which a demand might be made at any time.

The monetary value of the excess current actually supplied calculated at a fixed rate per horse power year would, of course, be insignificant since the demands for this excess current are always of slight duration. But the expense incurred, in installing, maintaining and operating the additional generating apparatus required to meet the demands for these excess currents or surges would be just as great in a case where the demand would be of momentary duration, as it would be in a case where the demand would be constant and continuous. This is especially true in a case like the case under consideration, where the power plant was installed for the express purpose of furnishing current to operate other motors used in connection with mining operations. How these surges or starting currents would affect the operation of the van-ners, cyanide plant and other appliances used in connection with a mine such as that operated by the defendant companies, has been explained in detail by witness Kinzie, witness Kennedy and witness Proebstel, and all the other experts whose evidence was taken upon this question. We desire to especially call the court's attention to the testimony of Mr. Kinzie, found on page 502 *et seq.* of the record. Also to the testi-

mony of Professor Cory, Mr. Quinn, Mr. Davis, and other experts as detailed in the record.

(See evidence Cory, Record, pp. 823, 830.)

(See evidence Davis, Record, pp. 862, 865.)

(See evidence Quinn, Record, pp. 967, 972, 973.)

(See evidence Hunt, Record, pp. 896, 901.)

(See evidence Kinzie, Record, pp. 502, 504.)

(See evidence Kennedy, Record, p. 457.)

(See evidence Proebstel, Record, pp. 377, 378.)

Mr. Kinzie on the pages referred to, explains in detail the effect that such surges or starting currents would have upon the generating plant and upon the mining operations of the defendant companies, and says that it would not only entail inconvenience and financial loss, but would likewise endanger the safety of a large number of employees. These effects could be avoided in but one way, and that would be by keeping sufficient generating capacity in reserve to take care of all such incoming surges or peaks, and to do this would require the outlay necessary to install and equip a plant having such excess capacity, and even this would, of course, not meet the requirements unless sufficient water power were available to operate a generator of such increased size.

Counsel for appellee propounds two cross interrogatories numbers 19, and 20, to each of the experts

whose depositions were taken and received in evidence. These interrogatories read as follows:

Cross Interrogatory No. 19: Assuming horse power to be worth \$87.00 per annum, what is the value of a thirty second starting surge of 600 horse power?

Cross Interrogatory No. 20: Assuming ordinary stoppage at a mining plant and the lightening of loads at change of shift time and a monthly stoppage of three to four hours per month in using a current of 300 horse power, would not these stoppages ordinarily more than compensate for starting surges of thirty seconds occurring from four to five times during a month?

Professor Cory's answers to these interrogatories are as follows (Record, p. 830):

Answer to Cross Interrogatory No. 19: The value of a thirty-second starting surge of 600 horse power based solely upon what a horse power is worth per annum would result in a practically negligible value of the starting surge lasting thirty seconds. Specifically, if the horse power is worth \$87.00 per annum, the value of a single thirty second starting surge of 600 horse power would not exceed five cents, but the cost to the power company of providing machinery and transmission lines of sufficient size to allow such starting surges of twice the normal use would be very considerable, particularly if the start-

ing surge of 600 horse power is a relatively large fraction of the total capacity of the plant.

Answer to Cross Interrogatory No. 20: A monthly stoppage of three or four hours in the use of current, or the reduction of the loads at change of shift time would not in any degree compensate for starting surges, even of only thirty seconds duration, if the power is furnished from the plant in question, which I know to have only 2600 horse power capacity, even when there is all the water necessary available. These surges require an increase in the size of the plant, increasing the investment necessary, and what is of more serious consequence, such surges interfere with the service given by the plant to all other circuits or customers. These starting surges require current of very low power factor in the starting of the induction motors, which low power factor more than anything else interferes with the satisfactory operation of the electrical machinery in the power house.

The answers of Mr. Davis to these interrogatories are (Record, p. 865) :

Answer to Cross Interrogatory No. 19: The value in kilowatts of a thirty second starting surge of 600 horse power as measured by the amount of water used will be 5c, but the value as representing interest charges, maintenance and operating costs applying to

generator, transformer and distributing capacity will vary from \$20,000 to \$50,000 per annum.

Answer to Cross Interrogatory No. 20: No, on account of the bad effect on the regulation of a system such as the one under consideration, which I am informed has a capacity of only 2000 kw. The effect of the low power factor of a 300 horse power squirrel cage induction motor when starting would ordinarily be three to nine times as bad as would be the case if the motor were started at unity power factor. The indirect losses from such injury to the regulation might prove to be a serious matter.

The answers of Mr. Hunt (Record, p. 901) to these same interrogatories are:

Answer to Cross Interrogatory No. 19: Assuming the intent of the question to be to state that one horse power is worth \$87.00 per annum, my answer is:

If by "a thirty second starting surge of 600 horse power" is meant that starting from any stated horse power this is increased instantly by 600 horse power, which increased load continues for 30 seconds, and then drops instantly to the stated amount, the amount of work performed by the 600 horse power of energy acting for the thirty seconds is equivalent to approximately .00057 of a horse power year; .00057 of a horse power year at \$87.00 per horse power year is 5.959 cents. However, this is not a measure of the value of such a surge.

The amount of such a surge in relation to capacity of plant may be such as to require an investment in electrical apparatus, greater than the total investment for such apparatus for handling 300 horse power without such surges.

Answer to Cross Interrogatory No. 20: The lightning of load and stoppages as assumed in the question would presumably tend to reduce the average rate of power used as much or more than four or five surges per month would increase it, but I should not consider them as compensating one for the other. Such surges do have a very serious effect upon the operation of a generating plant, especially when the ratio of the amount of such surges to the plant capacity is considerable, and the operation of other connected loads may be seriously interfered with under such conditions. Such interference may be so serious as to make the power which the plant is capable of producing absolutely unfit for some uses.

The answers of Mr. Quinn (Record, pp. 972, 973) to these interrogatories are as follows:

Answer to Cross Interrogatory No. 19: The value in United States Gold Coin of a 600 horse power starting surge continuing during a period of 30 seconds is practically insignificant. The value of keeping such a surge off the supply system cannot be measured in dollars and cents. Such a surge under some

conditions might cause the suspension or shutting off of all mining operations which were receiving their electric power from the source of supply affected by such a surge.

Answer to Cross Interrogatory No. 20: The three conditions as mentioned would not compensate for the harm done by such a heavy starting surge. Assuming that the source of power is limited and such a surge occurred, and that the source of supply was furnishing electric current to operate electrically driven pumps handling cyanide solutions, the stoppage or interference with the duty of these pumps would possibly cause a very large monetary loss.

If a motor of 300 horse power requires 600 horse power to start, it is reasonable to assume that the supply company must at all times have available 600 horse power to start the motor, and if the motor under full load used but 300 horse power there would necessarily be 300 horse power standing idle. Assuming that the cost of installing 1 horse power is \$100.00 this would represent an investment of \$30,000.00, which at 6% per annum would amount to \$1800.00. To this there should be added depreciation on the idle machinery, which under usual engineering practice in a plant of this kind is computed at 7% per annum, which would amount to \$2100.00 for depreciation.

The testimony of all these witnesses concerning the necessity of installing an instantaneous circuit breaker given in response to Direct Interrogatories 30, 31 and 32, is to like effect, and more fully explains and amplifies the answers above quoted.

(See evidence Cory, Record, p. 822.)

(See evidence Hunt, Record, p. 896.)

(See evidence Davis, Record, p. 862.)

(See evidence Quinn, Record, p. 966.)

(See evidence Kinzie, Record, pp. 498-504.)

EFFECT OF THE FINDINGS OF THE COURT RELATING TO MATTERS OUTSIDE OF THE WRITTEN CONTRACT.

The court does not anywhere find that the parties made any agreement, or for that matter made any statement to the effect that the appellee should be entitled to sufficient current whatever the quantity of current might be to enable it to generate 300 mechanical horse power, nor is there anything in either the findings or the evidence to show that the appellee as the successor to the Oxford Company would be entitled to anything except a current of 56.2 amperes; that is to say, a current measured by the unit 300 electric horse power calculated by multiplying the volts by the amperes and dividing the product by 746, that being the current from which 300 mechanical horse power can be developed, and will be developed if all the energy contained in the

current is transformed into mechanical power. Neither is there anything in the findings of the court or in the evidence upon which these findings are based that would indicate that the parties did not intend that the express limitation of *not to exceed* 300 electric horse power was intended to limit the current at all times to current not greater in extent than 300 electric horse power, in order that the Oxford Company and its assigns might have the right to draw starting currents or peaks to be used for starting machinery and apparatus. This matter of starting currents and peaks, like the matter of power factor, was never either mentioned or discussed by the parties.

(See evidence Shackleford, Record, p. 111.)

Nor does the court find that it was so discussed. The court finds that Mr. Bradley represented to Mr. Endicott and others that 150 horse power would be sufficient to operate the Sheep Creek mines equipped with a thirty stamp mill, the stamps being light and undersized, and that Mr. Bradley stated that 200 horse power would be at least ample for that purpose. This matter was afterwards submitted to Mr. Thane, who gave it as his opinion that 300 horse power would be required, whereupon 300 electric horse power was substituted in the contract in place of 200 electric horse power. Certainly there is nothing in these findings or in this evidence that tends to support the conclusions of the court. The question

of whether 56.2 amperes now furnished the appellee by the appellants will develop 300 mechanical horse power depends altogether upon the manner in which it is developed, and this is, of course, under the control of the appellee. It can develop the current so as to convert it into 300 mechanical horse power, and if it does this, it can use it either in operating the Sheep Creek mines or use it elsewhere. Again, the question of whether it needs a starting current in order to start its apparatus depends entirely upon the equipment and the manner of using. If the motors are equipped with starting devices in general use for that purpose, or if the load is taken off at time of starting, no starting currents would be necessary. There is nothing in the findings of the court in this regard, therefore, that would indicate that the parties ever intended that the current should not be limited as by the contract expressly provided, and that the words "*not to exceed*" were inserted in the contract in order that there might be no future misunderstanding on that subject.

To start with, Mr. Bradley's object in installing this generating plant, was not to erect a power plant with a view of selling power to this and that customer, but to procure power to be utilized in connection with the operation of the mines owned by the defendant companies. The damage that would result to the mining operations of the defendant companies if the Oxford Company or its successors were

permitted to make momentary demands for current greatly in excess of 300 horse power dealt with, was explained by the witnesses in detail and has already been considered.

Mr. Bradley's well-known ability as a mining engineer and his extensive knowledge of all matters pertaining to mine operation is such that there can be no doubt but that he had all these things in mind at the time the contract was executed; and that he sought to protect himself by insisting upon an express provision in the contract himself which limited the demands for current to a current of not to exceed 300 electric horse power. Nor is there anything in the negotiations or statements made by the parties from which it can be inferred that those carrying on the negotiations for the Oxford Company had anything else in view. Mr. Shackleford testified that the matter of peaks, starting surges, or current, was never mentioned (see evidence Shackleford, Record, p. 111). And the objects sought to be effected by the contract were certainly such as to preclude the idea that any one connected with the Oxford Company ever expected to have the right, under the contract to be executed, to draw starting surges or peaks in excess of 300 horse power.

When this contract was made Mr. Bradley at least considered the Sheep Creek water right as having been forfeited by reason of non-user, but whether forfeited or not it had never been used except to fur-

nish power in connection with the operation of the Sheep Creek mines, and the water right of the Oxford Company and its predecessors was limited by the amount of water necessary for that purpose. The rights of the Oxford Company and the International Trust Company to the use of the waters in Sheep Creek extended only to so much of the waters as had been appropriated by them and applied to a beneficial use. All the balance of the water flowing in the creek was subject to appropriation and could have been appropriated by Mr. Bradley without carrying on any negotiations with these companies. The most that Mr. Bradley could hope to procure from the International Trust Company or the Oxford Company was the right that these parties actually possessed, in addition, of course, to the mill sites and other pieces and articles of property to which the contract relates. And the evident object of the parties in endeavoring to arrive at the quantity of current that was to be furnished as compensation for the water and other properties to be conveyed was a current necessary to operate the Sheep Creek mines and the 30 stamp mill then on the ground.

Now, it is a uniform rule so well known in all mining communities that all are familiar with it, that in calculating the power necessary for mining purposes, five horse power is calculated as the power necessary to do the mining and milling for each stamp installed. That is to say, it is not calculated that five

horse power is necessary to operate the stamps for each stamp installed, but to operate the stamps, necessary crushers, vanners, drills, air compressors, and the like. So that a mine having a 10 stamp mill would require 50 horse power to operate its drills, compressors, crushers, vanners, stamps and all other necessary machinery.

It is also well known that where electric current is used, considerably less power is required than where the power is developed by some other means. It appears in evidence that the stamps in the 30 stamp mill on the Sheep Creek property were undersized and light stamps, so that the power requirements ordinarily would be less than normal. But figuring at the normal rate, a mine having 30 stamps would require five times thirty, or one hundred and fifty horse power to operate. Mr. Bradley in answer to Cross Interrogatory No. 1, discusses in detail the power requirements of the Sheep Creek mine with a thirty stamp mill, and says that 150 horse power was ample for that purpose. This is also in accord with his letter to Mr. Endicott. Mr. Bradley was asked concerning this letter and in answer to Cross Interrogatory No. 11, says:

“ . . . If the current provided for by the contract should be efficiently and economically used it would provide more power than was utilized for driving the 30 stamp mill machinery on the property prior to August 19, 1909.

“ . . . So, in stating in my letter to Mr. En-

dicott that the 30 stamp mill was amply large enough for the mine and that 150 horse power was all that was ever required for operating both the mines and 30 stamp mill and in allowing 33 1/3% margin, or a margin of 50 horse power, afterwards increased to a margin of 150 horse power, I was absolutely fair and frank in my letter. Especially in view of the fact that my letter had definite reference to the 30 stamp mill operation, and for such operation the motors would necessarily be of small units and could be easily started up one at a time without exceeding the then proposed limit of 200 electric horse power, which was afterwards increased to a limit of 300 electric horse power."

When this matter was afterwards taken up by Mr. Shackleford with Mr. Endicott, and others in Boston, Mr. B. L. Thane was called in and the matter was submitted to him, and he advised them to insist on 300 electric horse power instead of 200, and this was afterwards agreed to by Mr. Bradley. Surely Mr. Thane would not advise anyone, that any mine in Alaska required 10 horse power to the stamp, and in addition to this occasion starting currents of several horse power in excess. Mr. Thane as a mining engineer must have known that the actual power requirements for operating the Sheep Creek mine would not exceed 150 horse power. According to Mr. Thane's statement of January 12, 1911. Mr. Thane states that the 300 electric horse power provided for in the Oxford Contract will run the Perseverance 100 stamp mill, and besides this furnish power to drive the

Gastineau Tunnel (see Bradley's deposition, answer to Direct Interrogatory No. 19, Record, p. 671).

Surely, if the 300 horse power would be sufficient for this purpose in 1912, 200 horse power would be sufficient to operate the mine equipped with 30 light stamps at Sheep Creek in 1909. Nor did Mr. Thane testify upon the trial that 150 horse power would not be sufficient for that purpose.

Testimony was also offered on the part of the plaintiff to show that it would require in excess of 150 horse power to operate the various pieces of machinery situate at Sheep Creek, in the year 1909, but Mr. Bradley and Mr. Kinzie both testified that they did not take these pieces of machinery into consideration, as many of them were useless, and that the estimate of 150 horse power was an estimate based upon the actual power requirements of the mine, and it is equally certain that neither Mr. Shackleford nor the Oxford Company, nor the International Trust Company, nor any one else, took into consideration the existence or non-existence of these pieces of machinery, or ever believed that the power reserved by the Oxford Contract was to be utilized in operating these machines. For many of these very machines were transferred from the Oxford Company to the defendant companies under this very contract. The compressor, for instance, that is at present used by the Alaska Juneau Gold Mining Company at Snow Slide Gulch Tunnel, was turned over to the defendant

companies under the contract of October, 1909. Surely it could not have been the intention of the Oxford Company, or of Mr. Shackelford, Mr. Thane, or any other party whatsoever, to reserve power for the use of the Oxford Company to be used in operating this compressor which was at the same time being conveyed and turned over to the defendant companies. This same is true of the other pieces of machinery described in and referred to in the Oxford Contract, and which were situate on the mill sites conveyed. This absolutely negatives the idea that any of the parties ever calculated to supply the Oxford Company with power with which to operate this machinery.

There is no room for doubt that 150 horse power is more than enough power to operate the Sheep Creek mine and 30 stamp mill. That being true, Mr. Bradley's estimate that 200 horse power would be amply sufficient to take care of all contingencies, as stated by him in his letter to Mr. Endicott, was at least a fair and liberal estimate of all the power that would ever be required. As has already been stated, the mine could not be operated with one motor, it would be necessary to install several very small motors; further, no one would install squirrel cage motors in connection with permanent mining operations. These motors, owing to their simplicity in design, may have their use in connection with rough work, but every operator desiring to install motors of the induction type

in connection with permanent operations, will install a slip ring type of motor, which could be started with from 125 to 150% under full load. This being the case, the mine could readily be operated with 150 horse power, either by installing starting devices, removing the load when starting, or by starting the motors one at a time, the larger ones first, and the smaller ones last; and the additional 50 horse power would be necessary only if the power factor were permitted to get below unity, or needlessly careless and wasteful methods were resorted to. And the substitution of 300 for 200 horse power makes the margin so large as to render entirely unnecessary any further discussion of the subject.

We desire, however, to again call the court's attention to the low price fixed upon the current to be furnished by the parties themselves, that is to say, the price of \$25,000, or \$5 per horse power year calculated at 6 per cent., or \$6.66 per horse power year calculated at 8 per cent., as against \$65 per horse power year now paid appellants by the Alaska Juneau Gold Mining Company for current measured just as appellants claim the appellee's current should be measured.

It is to be observed in this connection that the Alaska Juneau Company not only pays for the current furnished, calculated at unity power factor, but the appellee has placed upon its circuit an instan-

taneous circuit breaker so that no peaks or starting currents can be taken by the Alaska Juneau Company.

(See evidence Proebstel, Record, p. 373.)

True, Mr. Kinzie testified that no charge was made the Alaska Juneau Company for starting currents when these were required, but he also testified that the Alaska Juneau Company had installed a motor of the slip ring type, that is to say, a Form M General Electric, and that these motors have a very slight starting torque. Motors of this type, according to Mr. Davis, engineer in charge of the General Electric Company's business at San Francisco, can be started with a starting current of about 25 per cent. in excess of the running current.

(See evidence Davis, Record, p. 861.)

And, furthermore, the Alaska Juneau Company is under the same management with the appellant companies, so that these starting currents can be furnished without the inconvenience and expense that it would to furnish the same if they were furnished to an outside corporation. If the parties had intended that the current to be furnished the appellee under the contract was to be limited in quantity so that the appellee or the Oxford Company's predecessor could employ any sort of a motor which was fit to develop it, or that the appellee might draw starting currents of unlimited extent, they would have placed a val-

uation upon the current far in excess of \$25,000, or \$5 per horse power year, the value fixed by the contract itself.

True, the court finds that motors of the induction type are and were generally used in connection with mining operations, and this is undoubtedly true, but it is equally true that synchronous motors are in general use in connection with such operations and also that synchronous condensers are in general use for the purpose of correcting the phase displacement where motors of the induction type are used.

This finding of the court finds no basis for the conclusion that the parties must have contracted with reference to the use of motors of the induction type, for as we already stated, these motors were not the only ones in use, but even if they were the only motors in use such finding could not form the basis of a conclusion that the parties contracted with reference to their use, for the reason that the extent of the phase displacement resulting from the use of motors of the induction type depends upon the particular motor employed. To say that a motor of the induction type is being used, is equivalent to saying nothing. A motor of the induction type, even when supplied with a synchronous condenser, can be operated at a very high power factor. That is to say, it can be operated so as to develop nearly all the electric energy contained in the current into mechanical power. To illustrate: The circuit of the appellant companies,

upon which at the time of the trial the motors of the induction type had been installed, had a power factor of from 85 to 95 per cent.

(See evidence Proebstel, Record, pp. 359, 387.)

Again, these motors may be such as to operate at a very low power factor. This is illustrated by the fact that the squirrel cage induction type motor used by the appellee was at the time of the trial being operated at a power factor of approximately 60 per cent.

(See evidence Wallenburg, Record, p. 295.)

The witness Wallenburg testified that the power factor of the appellee's circuit was 70 per cent., and when it is considered that a considerable portion of the current was used for lighting purposes, it would have a tendency to improve the power factor and bring it nearer to unity, the power factor of the motor must have been much more than 60 per cent.

THAT PORTION OF THE DECREE BY WHICH APPELLANTS
ARE DIRECTED TO INSTALL A WATTMETER AND A
TIME RELAY CIRCUIT BREAKER.

The court in its decree also provides that the appellants shall install a wattmeter at their power plant to be used in connection with the measuring of the current to be furnished and a time relay circuit

breaker so set by the appellee can draw starting currents of thirty seconds' duration.

There is nothing in any of the contracts before the court or in any of its findings, or in any of the testimony adduced that in any wise warrants this part of the decree. Here the court not only directs what appellants are required to furnish the appellee, but in addition to this directs the appellants to use certain apparatus in furnishing the thing to be furnished. The contract makes no reference to the apparatus used whatsoever, nor were any statements made by the parties prior to the execution of the contract with reference to the use of this or that apparatus. The court might with equal propriety have required the appellee to do away with its present generating plant and erect another. Aside from the fact that the court would not warrant it in asking the appellants to install apparatus of this type, the installation of the time relay circuit breaker would be ruinous to appellants and the installation of the wattmeter would be useless.

The wattmeter is a device placed upon a circuit for the purpose, not of measuring the current, but for the purpose of measuring the quantity of power actually developed by the motor. It measures the number of watts drawn by the motor from the circuit without any reference to the quantity of current taken from the bus bars of the generating plant. The device was not intended to measure current but to measure

power, and cannot be used for the purpose of measuring current.

(See evidence Davis, Record, p. 860.)

(See evidence Cory, Record, p. 820.)

(See evidence Hunt, Record, p. 894.)

(See evidence Heise, Record, p. 931.)

(See evidence Quinn, Record, p. 964.)

The only device manufactured by which electric current can be measured is the instantaneous circuit breaker. When this device is used an ammeter is used to measure the number of amperes made available and the circuit breaker set accordingly. In cases where the voltage is kept constant, as it is at the Sheep Creek generating plant, no other device is necessary, for the number of volts being known, it is only necessary to fix the number of amperes in order to determine the number of watts, since the number of watts are equal to the product of the volts and the amperes. This is the only manner in which electric current can be measured.

(See evidence Cory, Record, p. 820.)

(See evidence Davis, Record, p. 860.)

(See evidence Hunt, Record, p. 894.)

(See evidence Heise, Record, p. 931.)

(See evidence Quinn, Record, p. 964.)

The instantaneous circuit breaker is placed upon the circuit in order that the current to be drawn shall at all times be limited to the number of amperes

determined upon. So far the instantaneous circuit breaker is used to measure the current, but the instantaneous circuit breaker has its other uses. This is the only device by which other machinery operated by current furnished from the same source from which the current is furnished to the circuit upon which the circuit breaker is placed can be protected against incoming peaks and short circuits. Unless the appellants are permitted to use this type of circuit breaker to protect themselves current cannot be with safety withdrawn from the Sheep Creek generators, and used in connection with appellants' mining operations. An incoming peak whether occasioned by a starting current or otherwise or a short circuit would either slacken down or stop the motors upon appellants' circuit, depending upon the extent of the peak or short circuit; the effect that such slackening of the speed would have upon the gold solutions in the cyanide plant, upon the operation of the vanners and other machinery used in connection with mining operations is apparent and is fully explained by the witnesses.

(See evidence Kinzie, Record, p. 502.)

(See evidence Cory, Record, pp. 823, 830.)

(See evidence Davis, Record, pp. 862, 865.)

(See evidence Heise, Record, p. 933.)

(See evidence Hunt, Record, pp. 896, 901.)

(See evidence Quinn, Record, pp. 967, 972, 973.)

(See evidence Proebstel, Record, pp. 377, 378.)

SUMMARY.

The contention of the appellants may be summarized as follows:

It is contended that the contract set up in the complaint being continuous in its nature in that it is unlimited as to time, and being for personal service in that it requires personal service of a high degree of skill to construct and operate a generating plant, maintain and keep the same in repair, is such a contract as a court of equity will not decree the specific performance of it, and that the court erred in overruling the demurrer raising this point.

It is next contended that the court erred in allowing the introduction of parol testimony to prove the negotiations, statements, conversations, correspondence and other matters that led up to the execution of the contract for the reason that all these matters were merged into the written contract.

It is next urged that the court erred in not allowing testimony of electrical experts offered for the purpose of proving a technical meaning of the phraseology employed in the contract.

The next contention is that the trial court erred in not permitting the witness Kinzie to testify to facts showing the non-compliance with the contract before the court on the part of the appellee and that the court further erred in that connection in not per-

mitting an amendment to the answer more specifically setting up such non-compliance.

Appellee at the close of the testimony again urged the point that the character of the contract sued upon is such that a court of equity will not specifically enforce it, this point having been again raised by reason that the demurrer had been overruled. The matters urged upon the demurrer, to wit: That the contract was of a continuous nature and was for a personal service requiring a high degree of skill, were renewed at this time, and in addition to the matters so urged, others which arose upon the evidence offered were called to the attention of the court, the first of these being that the construction placed upon the contract by the court involves the whole matter in so much uncertainty that the contract cannot be specifically enforced, in this, that under the court's decree the quantity of current to which the appellee is entitled no longer depends upon the performance either of the contract or the decree, but entirely upon the subsequent acts of the appellee. So that it is impossible to say what the quantity of current to which the appellee will be entitled may be at any time in the future. In this connection it is, therefore, urged, that if the court hold that there is any merit in the contention that the contract was so uncertain as to require parol testimony to explain it, that fact alone would be a bar to its specific performance.

In this connection it is further urged that because of the outstanding Gilbert contract and the contract of April 22, 1911, made between appellants and the Oxford Company in relation to the Gilbert contract the quantity of current to be furnished under the contract of October, 1909, might be materially diminished, if not entirely done away with, should the court at a future time hold that Gilbert or his assigns were entitled to anything under the so-called Gilbert contract. In this connection it is further urged that since the appellee has become the holder of the Gilbert contract as Gilbert's assignee, it failed to do equity in not surrendering that contract or relinquishing all its rights thereunder before the commencement of this suit, and that not having done equity, it is in no position to ask equity. For these various reasons it is urged that specific performance should have been denied at the close of the testimony and the appeal dismissed.

The next point urged deals with the construction of the contracts themselves. It was conceded in the complaint and the court found that the appellants were at the time of the commencement of the suit making available for the use of the appellee a current of approximately 60 amperes with a voltage of 2300 impressed upon a three phase circuit. This it is claimed by appellants was in compliance with the terms of the contracts on their part in that they made available for appellee's use an electric current of not to exceed 300

electrical horse power to be taken from and at the generating plant.

The court, however, held that the current was not to be measured as the same was taken from and at the generating plant, but that the appellee had the right under the contract to use motors, long transmission wires and other apparatus having such characteristics that their use would result in a phase displacement so that a portion of the current taken from and at the generating plant only would or could be developed into useful mechanical power, and that the appellants were required to furnish the appellee with sufficient current to enable it to develop 300 real mechanical horse power by the use of such motors as it might install without regard to the length of the transmission wires or other apparatus used, and without regard to the efficiency of the motor or the manner of installing or operating the same. And further, that the appellee was entitled to draw starting surges or currents in excess of 300 horse power without placing any limit upon the extent to which such starting surges or currents might exceed 300 electric horse power provided that the same did not continue over a period of more than thirty seconds, and, further, that the appellants would be required to install a wattmeter and a time relay circuit-breaker, and in addition to this permit the appellee to install apparatus upon appellants' panel at the generating plant in such a manner that the appellee would have the same under lock and key. It

is contended that the court erred in all these respects and that the error so committed by the court is fraught with most serious consequences to the appellants.

Appellants are the owners of large mines requiring a vast quantity of power in connection with their operations. The Sheep Creek generating plant was constructed by appellants at an enormous expense with a view of generating current to meet these requirements for power, with the belief and understanding that a portion of the current generated only was to be placed at the disposal of the Oxford Company and the appellee, as its successor. That is to say, sufficient of the current to meet the requirements of a current not to exceed 300 electric horse power, and that this much current was to be made available for the Oxford Company's use at any and all seasons of the year regardless of whether there was water enough in Sheep Creek to develop any current in excess of that amount or not, the only limitation being that while the contract contemplated the delivery of an uninterrupted current, the appellants would not be liable for damages resulting from physical or operating causes beyond their control. The balance of the current generated, however, to go to appellants. The plant erected by appellants has a capacity of 2600 horse power. That is to say, the generators installed can generate a current of 2600 electrical horse power measured in the same manner that appellants contend the current of 300 elec-

trical horse power to be made available for the use of the appellee should be measured.

The current so generated by appellants in excess to that furnished to the appellee was designed for use in connection with their mining operations, and is valued only when appellants can rely upon the same being at their disposal at all times during the season when there is sufficient water in Sheep Creek to generate it without interruptions.

Under the decree of the court the appellee is given the right not merely to take such portion of the current generated, as it was clearly intended that it should have a right to take a little more than one-ninth of the total capacity of the plant when there was sufficient water to operate the plant to its fullest capacity, which portion was to go to it regardless of whether there was water enough in Sheep Creek or not; but the appellee is given the right to take not only all the current generated when the generator is working to its capacity but to take many times the total capacity of the generating plant, and it is given the right to do this in two ways: It may install inefficient motors, use long transmission wires, or other apparatus that will result in so distorting the current generated at the generating plant that current far in excess of that which the present plant is able to generate will be required to enable it to develop 300 horse power. Again, the appellee is given the right to draw from the bus bars starting currents or surges which may far exceed

the total generating capacity of the plant, and these it may draw as often as it sees fit provided that such starting surges or currents do not exceed thirty seconds in duration.

It has already been shown that this limitation placed upon the starting surges or currents is in practice of no advantage to the appellants for the reason that the appellants are compelled to keep in reserve generating capacity to meet these excess demands for current at any and all times, so that they might as well be drawn at all times as far as the practical effect is concerned.

Not only has the appellee in this second provision of the decree a right to take not only the generating capacity of the Sheep Creek plant, but the capacity of many such plants; but the appellee is at present with the apparatus it is now using practically appropriating all the current that the Sheep Creek plant can generate. That is to say, it is operating a squirrel cage motor of the induction type at a power factor of about 60 per cent., which means that it is wasting 40 per cent. of the current drawn from the bus bars, so that they are drawing a current of 540 horse power in order to develop 300 horse power. That is to say, drawing a little more than one-fifth of the total generating capacity of the plant at such times as the machinery is actually in operation. Now, the starting current of a squirrel cage motor is from three to five times as great as its running current. If the starting current in this motor is five times as great as its running current,

it will require five times 540 horse power to start it, or 2700 horse power, which is 100 horse power more than the total generating capacity of the Sheep Creek plant. Since the appellee has the right under the decree to thus take all the current generated and may exercise that right at any time, the appellants are unable to rely upon the generating plant at Sheep Creek for current to develop power in connection with their own operations, and being unable to so rely upon the Sheep Creek plant for that purpose, must, if the decree of the trial court is sustained, make other provisions for power with which to operate their mines. In practical effect, therefore, the decree of the court absolutely destroys the value of the Sheep Creek plant to appellants. Not only does the decree destroy the value to appellants because they are so situated that the current must be such that they can make calculations to rely upon it for mining purposes, but it also destroys the market or sale value of the plant, for certainly no one could be induced to purchase a generating plant from which another had a right to draw all the current. Again, as has already been stated, that portion of the decree which directs the appellants to install a time relay circuit-breaker, makes the plant useless to appellants for their purposes for the reason that such circuit-breaker will not protect the motors and other apparatus employed upon appellants' circuit against incoming peaks and short circuits, and in this connection it is contended that there is nothing in the

contracts that will warrant the court to direct the appellants to install any particular kind of apparatus or machinery whatsoever, nor is there anything in the contract that requires appellants to permit the appellee to install machinery upon their premises.

Not only does the decree of the court totally destroy the value of the Sheep Creek plant to appellants, but it does so without giving the appellee any particular advantage. It merely permits the appellee to waste the current generated at the plant without deriving any advantage therefrom, except such slight advantage as may come to it from money saved as the result of using cheap and inadequate machinery and appliances.

The court found that the appellee was entitled to the beneficial use of 300 horse power. We contend that the appellee should be compelled to make a beneficial use of the current furnished it and not dissipate or waste it.

Laying aside all the technical features connected with this contract, it occurs to us that it can be construed in a common sense way by adopting this line of reasoning. The generating plant installed by appellants generates a current of 2600 horse power. That is to say, it generates a current which is a current of 2600 horse power if the volts are multiplied by the amperes and the result divided by 746, that being the unit by which the current purchased by appellants is measured and that is what it amounts to for the appel-

lants in installing a generating plant merely expend their money in exchange for so much current. It is but fair and equitable that the same unit of measurement should be used when the current is either sold to another or is divided with another under a pre-existing arrangement. If a seller employs the same unit of measurement in selling that he employs in buying, the transaction certainly appears fair, and it is the right to do this and nothing more that appellants ask for in this case.

Contending that the trial court erred in misconceiving the rights of the parties and in its rulings relative to the evidence, we state (for convenient reference) the following proposition advanced on the part of appellants with the authorities referred to in support of each, respectively as follows:

- I. THE APPEAL BEFORE THE COURT BEING AN APPEAL IN EQUITY, BRINGS UP FOR REVIEW THE QUESTIONS OF FACT AS WELL AS THE QUESTIONS OF LAW PRESENTED BY THE RECORD.

“The writ of error, in cases of common law, remains in force, and submits to the revision of the Supreme Court only the law. The remedy by appeal is confined to admiralty and equity cases, and brings before the Supreme Court the facts as well as the law.”

The San Pedro, 15 U. S., 132, 141.

If findings presented for review on appeal are clearly erroneous or unsupported by any evidence, they will be set aside.

"We are not unmindful that both the Circuit and District Court came to a conclusion different from ours as to the alleged fault of the steamer.

"Their judgments are entitled to, and have received, our most respectful consideration. Their concurrence raises a presumption, *prima facie*, that they are correct. Mere doubts should not be permitted to disturb them. *But the presumption referred to may be rebutted. The right of appeal to this court is a substantial right, and not a shadow. It involves examination, thought, and judgment. Where our convictions are clear, and differ from those of the learned judges below, we may not abdicate the performance of the duty which the law imposes upon us by declining to give our own judicial effect."*

The Ariadne, 80 U. S., 475, 479.

"If the court below neglects or refuses to make a finding, one way or the other, as to the existence of a material fact which has been established by uncontradicted evidence, or if it finds such a fact when not supported by any evidence whatever, and an exception be taken, the question may be brought up for review in that particular. In the one case the refusal to find would be equivalent to finding that the fact was immaterial; and, in the other, that there was some evidence to prove what is found, when in truth there was none. Both of these are questions of law, and are proper subjects for review in an appellate court. The

Francis Wright, 105 U. S., 381, 387; *The E. A. Packer*, 140 U. S., 360."

City of New York, 147 U. S., 72, 77.

"The plaintiff duly excepted to the findings and conclusions, and it is well settled that *exceptions to alleged findings of facts because unsupported by evidence present questions of law reviewable in courts of error.*"

Laing vs. Rigney, 160 U. S., 531, 540.

"*At the same time there has always been recognized the right and the duty of this court to examine the record, and if it finds that the conclusions are wholly unwarranted by the testimony it will set the verdict or report aside and direct a re-examination. And after having carefully examined the record in this case we are constrained to the conclusion that there is no testimony which justified the answer returned to the second question. On the contrary, if a will is set aside upon such a flimsy showing as was made of undue influence, few wills can hope to stand.*"

Beyer vs. LeFevre, 186 U. S., 114, 118.

"Appeals from the final decrees in these (Circuit) courts extend to an examination of the facts as well as the law. While upon such review this court will generally accept the concurrent conclusions of the trial and appellate courts, yet, as was said by Mr. Justice Brewer in *Beyer vs. LeFevre*, 186 U. S., 114, 119: 'There has always been recognized the right and duty of this court to examine the record, and if it finds that the conclusions are wholly unwarranted by the testimony it will

set the verdict or report aside and direct a re-examination.' ”

De LaRama vs. De LaRama, 201 U. S., 303, 309.

“Now, coming to consider the evidence in the light of this rule, we are constrained to the conclusion that the premise upon which the courts below acted, that is, the existence of a list of notes left by Tracy, is without any support in the evidence, and, indeed, rests but upon a mere mistaken assumption.”

Darlington vs. Turner, 202 U. S., 195, 220.

See also:

The Juniata, 93 U. S., 337, 339;

Mammoth Mining Co. vs. Salt Lake Mining Co., 151 U. S., 447, 451;

Stuart vs. Hayden, 169 U. S., 1, 14;

Tomson vs. Moore, 173 U. S., 17, 24;

Brainard vs. Buck, 184 U. S., 99, 105;

The Iroquois, 194 U. S., 240, 247.

II. THE CONCLUSIVE PRESUMPTION IS THAT THE WHOLE CONTRACT WAS REDUCED TO WRITING AND THAT ALL PRIOR NEGOTIATIONS AND REPRESENTATIONS WERE MERGED IN THE WRITTEN CONTRACT.

“It has been said, that by looking at the preliminary agreement, the court will see that terms of a more limited nature are there used. Be it so. But will that justify the court in resorting to it to

explain or limit the legal import of words in a solemn instrument, which contains no reference to it? If we could resort to it, the natural conclusion would be, in the absence of all contrary proof, that the last instrument embodied the real intent of the parties; that the preliminary agreement either imperfectly expressed their intent, or was designedly modified in the final act. *The general rule of law is, that all preliminary negotiations and agreements are to be deemed merged in the final, settled instruments executed by the parties, unless a clear mistake be established.*"

Van Ness vs. City of Washington, 29 U. S., 232, 285.

"Verbal agreements between the parties to a written contract, made before or at the time of the execution of the contract, are in general inadmissible to vary its terms, or to affect its construction. *All such verbal agreements are considered as merged in the written contract.*"

Emerson vs. Slater, 63 U. S., 28, 41.

"Verbal agreements, however, between the parties to a written contract, made before or at the time of the execution of the contract, are not in general admissible to contradict or vary its terms or to affect its construction, as all such verbal agreements are considered as merged in the written contract."

The Delaware, 81 U. S., 579, 604.

"We think it equally clear, that the terms of the contract having been reduced to writing, signed by one party and accepted by the other at

the time the premium of insurance was paid, neither party can abandon that instrument, as of no value in ascertaining what the contract was, and resort to the verbal negotiations which were preliminary to its execution, for that purpose. The doctrine is too well settled that all previous negotiations and verbal statements are merged and excluded when the parties assent to a written instrument as expressing the agreement."

Insurance Company vs. Lyman, 82 U. S., 664, 670.

"Verbal agreements between the parties to a written contract made before or at the time of the execution of the contract are, in general, inadmissible to vary its terms or to affect its construction, *as all such agreements are considered as merged in the written contract.*"

Platt's Administrator vs. United States, 89 U. S., 496, 506.

"All this is irrelevant matter. The written contract merged all previous negotiations, and is presumed, in law, to express the final understanding of the parties. If the contract did not express the true agreement, it was the claimant's folly to have signed it. The court cannot be governed by any such outside considerations."

Brawley vs. United States, 96 U. S., 168, 173.

"No principle of evidence is better settled at the common law than that when persons put their contracts in writing, it is, in the absence of fraud, accident, or mistake, 'conclusively presumed that

the whole engagement, and the extent and manner of their undertaking, was reduced to writing.' ”

Bast vs. Bank, 101 U. S., 93, 96.

“It was also decided in that case that the legal effect of the final instrument which defined and declared the intentions and rights of the parties, could not be modified or controlled by proof of any preliminary negotiations or agreement. ‘The general rule of law is,’ said the court, ‘that all preliminary negotiations and agreements are to be deemed merged in the final settled instruments executed by the parties, unless a clear mistake be established.’ ”

Potomac Steamboat Co. vs. Upper Pot. S. Co.,
109 U. S., 672, 681.

“The third proposition, that the court erred in excluding evidence of an antecedent conversation between the salesman and one of the plaintiffs in error, is disposed of by the well-settled rule, that ‘when parties have deliberately put their engagements into writing, in such terms as import a legal obligation, without any uncertainty as to the object or extent of such engagement, *it is conclusively presumed that the whole engagement of the parties, and the extent and manner of their undertaking, was reduced to writing*; and all oral testimony of a previous *colloquium between the parties . . . as it would tend in many instances to substitute a new and different contract for the one which was really agreed upon, to the prejudice, possibly, of one of the parties, is rejected.*’ ”

De Witt vs. Berry, 134 U. S., 306, 315.

"The principle was clearly announced in *Brawley vs. United States*, 96 U. S., 168, 173, where it was said:

" 'All this is irrelevant matter. *The written contract merged all previous negotiations, and is presumed, in law, to express the final understanding of the parties.* If the contract did not express the true agreement, it was the claimant's folly to have signed it. The court cannot be governed by any such outside considerations.' "

Simpson vs. United States, 172 U. S., 372, 379.

III. THE COURT ERRED IN ADMITTING PAROL EVIDENCE WHICH VARIED THE WRITTEN CONTRACTS OF THE PARTIES.

"Parol evidence is certainly not admissible to contradict, vary, or control a written contract."

Moran vs. Prather, 90 U. S., 492, 502.

"The rule which excludes parol testimony to contradict or vary a written instrument has reference to the language used by the parties. That cannot be qualified or varied from its natural import, but must speak for itself."

Peugh vs. Davis, 96 U. S., 332, 336.

"The rule which excludes parol testimony to contradict or vary a written instrument has reference to the language used by the parties. That cannot be qualified or varied from its natural import, but must speak for itself."

Brick vs. Brick, 98 U. S., 514, 516.

"Parol evidence is inadmissible to contradict or vary the language of a valid written instrument by which is meant that the language employed by the parties in making it, and no other must be used in ascertaining its meaning. 1 *Greenl. Evid.* (12th ed.) Sect. 277."

West vs. Smith, 101 U. S., 263, 271.

"It is a fundamental rule, in courts both of law and equity, that parol contemporaneous evidence is inadmissible to contradict or vary the terms of a valid written instrument. This rule is thus expressed in *Greenleaf on Evidence*, Vol. 1, Sec. 275, 12th ed.:

" 'When parties have deliberately put their engagements into writing, in such terms as import a legal obligation, without any uncertainty as to the object or extent of such engagement, it is conclusively presumed that the whole engagement of the parties, and the extent and manner of their undertaking, was reduced to writing; and all oral testimony of a previous colloquim between the parties, or of conversation or declaration at the time when it was completed, or afterwards, as it would tend in many instances to substitute a new and different contract for the one which was really agreed upon, to the prejudice, possibly, of one of the parties, is rejected.' "

"The rule is thus expressed by *Starkie*, 587, 9th Am. ed.:

" 'It is likewise a general and most inflexible rule, that wherever written instruments are appointed, either by the requirement of law or by the compact of the parties, to be the repositories and memorials of truth, any other evidence is excluded from being used, either as a substitute for such instruments or to contradict or alter them. This is a

matter both of principle and policy; of principle because such instruments are in their nature and origin entitled to a much higher degree of credit than parol evidence; of policy, because it would be attended with great mischief if these instruments upon which men's rights depended were liable to be impeached by loose collateral evidence.' "

Northern Assur. Co. vs. Grand View Bld'g Assoc., 183 U. S., 308, 318.

See also:

Brown vs. Spafford, 95 U. S., 474, 480;

U. S. vs. Fossatt, 20 How., 413, 427;

Keene vs. Meade, 3 Pet., 1, 8;

Ross vs. McLurg, 6 Pet., 283, 289;

Weather Lead vs. Basperville, 11 How., 329, 357;

Hurt vs. Rousmanier, 8 Wheat, 174;

Shanklord vs. Washington, 5 Pet., 390, 394;

Philadelphia Railroad Co. vs. Stimpson, 14 Pet., 448, 461;

Clark vs. Manufacturers' Ins. Co., 8 How., 235;

Brick vs. Brick, 98 U. S., 514, 516;

Meyerson vs. Tart, 167 Fed., 965, 967 (Circuit Court of Appeals, Second Circuit);

Gammino vs. Town of Dedham, 164 Fed., 593, 597 (Circuit Court of Appeals, First Circuit);

Hirsh vs. Georgia Iron & Coal Co., 169 Fed., 578, 816 (Circuit Court of Appeals, Sixth Circuit).

IV. THE CONTRACT ITSELF IS FREE FROM AMBIGUITY;
THEREFORE IT WAS IMPROPER FOR THE COURT TO
TAKE EVIDENCE FOR THE PURPOSE OF PLACING ITSELF
IN THE SITUATION OF THE PARTIES.

“And the court cannot, without evidence authorizing it to be done, import words into the contract which would make it materially different in a vital particular from what it now is. There is no occasion to introduce parol evidence to explain anything in the contract, because there is no ambiguity about it, and it is not competent by this sort of evidence to alter the terms of a contract, by showing that there was an antecedent parol agreement or understanding between the parties different in a material particular from that which the contract contained.”

Gavinzel vs. Crump, 89 U. S., 308, 319.

“In the light of the surrounding circumstances, the meaning of the two contracts is plain and is not open to construction, especially to a construction which relieves one party of all the obligations assumed by him and puts them upon another, who had not assumed them at all.”

Baltzer vs. Raleigh & Augusta Railroad, 115
U. S., 634, 644.

“If the language is clear and unambiguous it must be taken according to its plain meaning as expressive of the intention of the parties, and under settled principles of judicial decision should not be controlled by the supposed inconvenience or hardship that may follow such construction. If parties think proper, they may agree that the right

of one to maintain an action against another shall be conditional or dependent upon the plaintiff's performance of covenants entered into on his part. On the other hand, they may agree that the performance by one shall be a condition precedent to the performance by the other. The question in each case is, which intent is disclosed by the language employed in the contract?"

Loud vs. Panama Land & Water Co., 153 U. S., 564, 576.

"The single question is whether the contract between the parties required all the sugar to be brought to Philadelphia in the *Empress of India*, upon which it was originally shipped. This depends upon the meaning of the terms of the writing in which the parties must be assumed to have embodied and expressed their whole intention, and to have defined all the conditions of the contract. The court is not at liberty, either to disregard words used by the parties, descriptive of the subject matter, or of any material incident, or to insert words which the parties have not made use of. *Norrington vs. Wright*, 115 U. S., 188; *Filley vs. Pope*, 115 U. S., 213; *Watts vs. Camors*, 115 U. S., 353; *Cleveland Rolling Mill vs. Rhodes*, 121 U. S., 255; *Seitz vs. Brewers' Refrigerating Co.*, 141 U. S., 510; *Bowes vs. Shand*, 2 App. Cas. 455; *Welsh vs. Gossler*, 89 N. Y., 540; *Cunningham vs. Judson*, 100 N. Y., 179; *Iasigi vs. Rosenstein*, 141 N. Y., 414."

Harrison vs. Fortlage, 161 U. S., 57, 63.

"It is true that in cases of ambiguity in contracts, as well as in statutes, courts will lean toward the presumed intention of the parties or the legis-

lature, and will so construe such contract or statute as to effectuate such intention; but where the language is clear and explicit there is no call for construction, and this principle does not apply. Parties are presumed to know the force and effect of the language in which they have chosen to embody their contracts, and to refuse to give effect to such language might result in artfully misleading others who had relied upon the words being used in their ordinary sense. In construing contracts words are to receive their plain and literal meaning, even though the intention of the party drawing the contract may have been different from that expressed. A party to a contract is responsible for ambiguity in his own expressions, and has no right to induce another to contract with him on the supposition that his words mean one thing while he hopes the court will adopt a construction by which they would mean another thing more to his advantage."

Calderon vs. Atlas Steamship Co., 170 U. S., 272, 280.

"The contract, being free from ambiguity, no exposition is allowable contrary to the express words of the instrument."

United States vs. Gleason, 175 U. S., 588, 606.

See:

O'Brien vs. Miller, 168 U. S., 287, 298;

Crimp vs. M'Cormick Const. Co., 72 Fed., 366
(Circuit Court of Appeals, Seventh Circuit).

V. THE ONLY POINT OF AMBIGUITY WHICH APPEARS TO HAVE BEEN CONSIDERED BY THE TRIAL COURT IS THAT THE WORDS "HORSE POWER" ARE OF UNCERTAIN MEANING.

See Decision of Lower Court, Vol. III Record, p. 1196.

VI. THE WORDS "HORSE POWER" ARE NOT OF UNCERTAIN MEANING.

"The learned trial judge was right in excluding the testimony offered for the purpose of showing the trade meaning of the word 'gas' used in the lease between the plaintiff and Guffey and Queen. The purpose was to show that in the oil and gas business the word 'gas' as used in such contracts, means gas derived from a gas well, and not from an oil well. The lease granted the right to drill and operate for 'petroleum oil or gas,' and provides that if gas is obtained in sufficient quantities to utilize, the consideration therefore should be \$500 per annum for each well drilled on the premises. The meaning of the word is neither ambiguous nor uncertain, but is well understood. Nor does the connection in which it is used give it a meaning requiring parol evidence to explain it. The offer was in effect not to explain, but to contradict, the explicit provisions of the contract, by showing that the lessees were to pay for the gas only on condition that it was produced or derived from a gas well. This would have been in direct opposition to the agreement, and in conflict with its terms. The lease, as we have seen, granted the right to drill for oil and gas, but the consideration to be paid for the gas did not depend on whether it was derived from an oil well or a gas well, but

whether the gas was 'obtained in sufficient quantities to utilize.' Parol evidence is not admissible for the purpose of making a new and different agreement for the parties, and hence the evidence, the rejection of which is complained of by the appellant, was properly excluded."

Burton vs. Oil Co., 204 Pa. St., 344; 54 Atl., 266, 268.

"Where a written contract was for the sale of beans 'delivered East St. Louis,' parol evidence as to the meaning of 'delivered' was properly excluded, as the contract was plain and unambiguous."

Lippert vs. Saginaw Milling Co., 84 N. W., 831, 833.

"Neither do we think that the clause, 'as long as they could make it pay,' has any special significance in this case. It is not in any sense ambiguous, and can have no different meaning when applied to mining than it has in any mechanical or agricultural employment. It is a term used daily in all the different enterprises and occupations in which men are engaged, and its scope is so well understood that no evidence is necessary to show what it is, or that it means anything different in one case than in another. When a party agrees to sell articles of merchandise, or deliver the productions of his labor to another at a certain price as long as he can make it pay, every one must clearly understand that the term is dependent on conditions over which the promisee has no control, and, in so far as any one has the power to make the term effective, it is lodged solely in the promisor, who by judicious purchases or skilful manipulations of

labor may be able to make a transaction pay when a more careless, negligent, or improvident person would be unable to do so."

Davie vs. Lumberman's Min. Co., 53 N. W., 625, 626 (Mich.).

"The instrument, it occurs to us, was in no wise ambiguous or uncertain, so as to call for extrinsic evidence to render certain the meaning of language which, without it, would be obscure or unintelligible. It required no explanation as to what the 'wholesale price' meant. The words 'wholesale price' have a fixed, certain, and well-defined meaning in the mercantile world. They mean the price fixed on merchandise by one who buys in large quantities of the producer or manufacturer, and who sells the same to jobbers, or to retail dealers therein. Neither can it be successfully claimed that the written contract leaves it a matter of doubt or uncertainty as to what wholesale price should be used in determining the value of the paper. The plaintiff or his assignor, by the plain terms of the contract, had a right to demand its fulfillment whenever he chose so to do. The contract was by its terms to be satisfied by delivery of wall paper at wholesale price, the delivery to take place on demand. It was then a contract in all respects complete and perfect as to the parties, the subject-matter, and the delivery."

Fawkner vs. Lew Smith Wall Paper Co., 55 N. W., 200, 201 (Iowa).

VII. IF IT BE CLAIMED THAT THESE WORDS WERE EMPLOYED BY THE PARTIES IN A SPECIAL OR TECHNICAL SENSE, THEN IT WAS PROPER FOR THE COURT TO RECEIVE EVIDENCE TENDING TO SHOW THE SPECIAL OR TECHNICAL MEANING WHICH THE PARTIES INTENDED THESE WORDS TO EXPRESS.

“Cases arise undoubtedly in which the testimony of expert witnesses is admissible to explain terms of art and technical words or phrases, and it may be admitted that a written instrument may be so interspersed with such technical terms that it would be error in the court to exclude the testimony of persons skilled in such matters, if duly offered by the proper party in the litigation.

“Terms of art, in the absence of parol testimony, must be understood in their primary sense, unless the context evidently shows that they were used in the particular case in some other and peculiar sense, in which case the testimony of persons skilled in the art or science may be admitted to aid the court in ascertaining the true intent and meaning of that part of the instrument, but the words of the instrument which have reference to the usual transactions of life must be interpreted according to their plain, ordinary, and popular meaning; and the rule is that parol evidence is not admissible to contradict or vary such an instrument.”

Moran vs. Prather, 90 U. S., 492, 494.

VIII. BUT SUCH EVIDENCE SHOULD HAVE BEEN LIMITED AND CONFINED TO A DEFINITION OF THE AMBIGUOUS WORDS, SO AS TO SHOW WHAT SPECIAL MEANING WAS CONTEMPLATED AND INTENDED BY THE PARTIES, BECAUSE THE RULE IS THAT ORAL EVIDENCE MAY NOT BE RECEIVED TO "CONTRADICT OR VARY THE TERMS OF A VALID WRITTEN CONTRACT," BUT ONLY TO EXPLAIN SOME LATENT AMBIGUITY WHICH IT CONTAINS.

"In the construction of all instruments, to ascertain the intention of the parties is the great object of the court; and this is especially the case in acting upon guarantees."

Mauron vs. Bullus, 41 U. S., 527, 533.

"The question always is, what did the parties intend by the language used? When such intention is ascertained it is ordinarily the duty of the court to carry it out. See also *Clement vs. Cash*, 21 N. Y., 253, 257; *Little vs. Banks*, 85 N. Y., 258, 266."

U. S. vs. Bethlehem Steel Co. 205 U. S., 105, 119.

"The construction of a contract is nothing more than the gathering of the intention of the parties to it from the words they have used."

Di Sora vs. Phillips, 10 H. L. Cas., 628, 683.

IX. THE COURT CANNOT RELIEVE A PARTY FROM THE EFFECT OF A CONTRACT LEGALLY MADE BY HIM, BECAUSE IT TURNS OUT TO BE HARSH, IMPROVIDENT, DISAPPOINTING, OR INEFFECTUAL FOR HIS PURPOSE, UPON THE THEORY THAT IT IS CORRECTING AN ASSUMED AMBIGUITY, AS, FOR EXAMPLE, WORDS OF AMBIGUOUS MEANING.

"If, then, the agreement was not founded in a mistake of any material fact, and if it was executed in strict conformity with itself, we think it would be unprecedented, for a court of equity to decree another security to be given, not only different from that which had been agreed upon, but one which had been deliberately considered and rejected by the party now asking for relief; or to treat the case, as if such other security had in fact been agreed upon and executed. Had Rousmaniere, after receiving the money agreed to be loaned to him, refused to give an irrevocable power of attorney, but offered to execute a mortgage of the vessels, no court of equity could have compelled the plaintiff to accept the security so offered. Or, if he had totally refused to execute the agreement, and the plaintiff had filed his bill, praying that the defendant might be compelled to execute a mortgage instead of an irrevocable power of attorney, could that court have granted the relief specifically asked for? We think not. Equity may compel parties to perform their agreements, when fairly entered into, according to their terms; but it has no power to make agreements for parties, and then compel them to execute the same. The former is a legitimate branch of its jurisdiction, and in its exercise, is highly beneficial to society; the latter is without its authority, and the exercise

of it would be not only an usurpation of power, but would be highly mischievous in its consequences."

Hunt vs. Rousmaniere, 1 Peters, p. 1, 13.

"However harsh or exacting its terms may be, as to the appellee, they do not contravene public policy, and, therefore, a refusal of the court to give effect to them, according to the real intention of the parties, is to make a contract for them which they have not chosen to make for themselves."

Cheney vs. Libby, 134 U. S., 68, 78.

The trial court appears to have struggled as if to relieve plaintiff from some hardship imposed upon it by the contracts involved. The contracts being plain there was no room for any equitable consideration.

"Courts have no power to make new contracts or to impose new terms upon parties to contracts without their consent. Their powers are exhausted in fixing the rights of parties to contracts already existing."

New Orleans vs. N. D. Water Works Co., 142 U. S., 79, 91.

"It is immaterial to consider the reasons for the conditions or provisions on which the contract is made to terminate, or any other provision of the policy which has been accepted and agreed upon. It is enough that the parties have made certain terms, conditions on which their contract shall continue or terminate. The courts may not make a contract for the parties. Their function and duty,

consist simply in enforcing and carrying out the one actually made."

Imperial Fire Ins. Co. vs. Coos County, 151
U. S., 452, 462.

"And, as this was not done, but on the contrary, as the obligation to pay for the cane was stated in the contract as arising from the sale, and was separated from the obligations of the lease by the reservation of a privilege and lien on the bounty money, the rule of strict interpretation precludes us from so reading the contract as to enlarge its terms to import a privilege not necessarily resulting therefrom."

Burdon Sugar Co. vs. Payne, 167 U. S., 127,
146.

X. THE REAL CONTENTION OF PLAINTIFF APPEARS TO BE THAT DEFENDANT, BY VIRTUE OF THE WRITTEN CONTRACT UNDER CONSIDERATION WARRANTED IN EFFECT THAT AN "ELECTRICAL CURRENT NOT TO EXCEED THREE HUNDRED HORSE POWER" DELIVERED AT ITS GENERATING PLANT WOULD DEVELOP A MECHANICAL POWER EQUIVALENT TO THREE HUNDRED HORSE POWER AT THE OPERATING PLANT OF PLAINTIFF. BUT THERE IS NO SUCH WARRANTY, EXPRESS OR IMPLIED, FAIRLY DEDUCIBLE FROM THE CONTRACT IN FAVOR OF PLAINTIFF OR FROM ANY SHOWING MADE BY THE RECORD.

"There is no pretense here of any fraud, accident or mistake. The written contract was in all respects unambiguous and definite. The machine which the company sold and which Seitz bought was a No. 2 size refrigerating machine as constructed by the company, and such was the machine which was delivered, put up and operated in the brewery. A warranty or guaranty that that machine should reduce the temperature of the brewery to 40° Fahrenheit, while in itself collateral to the sale, which would be complete without it, would be part of the description and essential to the identity of the thing sold; and to admit proof of such an engagement by parol would be to add another term to the written contract, contrary to the settled and salutary rule upon that subject.

"Whether the written contract fully expressed the terms of the agreement was a question for the court, and since it was in this instance complete and perfect on its face, without ambiguity, and embracing the whole subject-matter, it obviously could not be determined to be less comprehensive

than it was. And this conclusion is unaffected by the fact that it did not allude to the capacity of the particular machine. To hold that mere silence opened the door to parol evidence in that regard would be to beg the whole question."

Seitz vs. Brewers' Refrigerating Co., 141 U. S.,
510, 517.

See also:

Osborn vs. Nicholson, 13 Wall, 654, 657;
*Wilson vs. New United States Cattle Ranch
Co.*, 73 Fed., 994, 998 (Circuit Court of Ap-
peals, Eighth Circuit) ;
Reynolds vs. General Electric Company, 141
Fed., 551, 556.

We urge that the court should direct a dismissal of this case for want of equity.

Respectfully submitted,

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